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Service

United States  
Department of  
Agriculture

# Washington Water Supply Outlook Report February 1, 2004





# Water Supply Outlook Reports

## and Federal - State - Private Cooperative Snow Surveys

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### *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# Washington Water Supply Outlook

February 2004

## General Outlook

Overall conditions are near normal for most of the State of Washington. The only exceptions are across the northern tier of the state from the Upper Skagit River Basin to the Idaho border where snowpack remains below average. Good snowfall accumulations were noted over the past couple of weeks. However increases in basin wide averages were limited and every week that goes by without significant snowfall reduces those averages. Climate outlooks provided by the National Weather Service indicate the possibility of February being a little dryer than normal. However 90-day forecasts indicate good chances of above average precipitation accompanied with above average temperatures.

## Snowpack

The February 1 statewide SNOTEL readings were near average at 102% of normal. The Omak Creek and Toats Coulee Creek snow surveys reported the lowest readings at 69% of average. Readings in the South Fork Nooksack River Basin reported the highest at 155% of average. Westside averages from SNOTEL, and February 1 snow surveys, included the North Puget Sound river basins with 124% of average, the Central Puget river basins with 109%, and the Lewis-Cowlitz basins with 106% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 101% and the Wenatchee area with 87%. Snowpack in the Spokane River Basin was at 109% and the Walla Walla River Basin had 117% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL near Mt. Rainer, with water content of 52.8 inches. This site would normally have 48.1 inches of water content on February 1. Last year at this time Paradise Park had 23.9 inches of snow water. The highest average in the state was Elbow Lake SNOTEL in the Nooksack River Basin with 161% of average.

| BASIN                   | PERCENT OF LAST YEAR | PERCENT OF AVERAGE |
|-------------------------|----------------------|--------------------|
| Spokane .....           | 217 .....            | 109                |
| Newman Lake .....       | 174 .....            | 109                |
| Pend Oreille .....      | 140 .....            | 100                |
| Okanogan .....          | 114 .....            | 88                 |
| Methow .....            | 90 .....             | 80                 |
| Similkameen .....       | 254 .....            | 94                 |
| Wenatchee .....         | 113 .....            | 85                 |
| Chelan .....            | 96 .....             | 73                 |
| Upper Yakima .....      | 144 .....            | 96                 |
| Lower Yakima .....      | 129 .....            | 106                |
| Ahtanum Creek .....     | 113 .....            | 104                |
| Walla Walla .....       | 237 .....            | 117                |
| Lower Snake .....       | 174 .....            | 110                |
| Cowlitz .....           | 203 .....            | 108                |
| Lewis .....             | 244 .....            | 103                |
| White .....             | 133 .....            | 108                |
| Green .....             | 285 .....            | 101                |
| Puyallup .....          | 134 .....            | 108                |
| Cedar .....             | 361 .....            | 107                |
| Snoqualmie .....        | 279 .....            | 105                |
| Skykomish .....         | 245 .....            | 107                |
| Skagit .....            | 131 .....            | 91                 |
| Baker .....             | 310 .....            | 126                |
| Nooksack .....          | 287 .....            | 155                |
| Olympic Peninsula ..... | 117 .....            | 100                |



## Precipitation

During the month of January, the National Weather Service and Natural Resources Conservation Service climate stations reported varying precipitation totals throughout Washington river basins. The highest percent of average in the state was at Chewelah, Washington which reported 349% of average for a total of 7.95 inches. The average for this site is 2.28 inches for January. The wettest spot in the state was reported at June Lake SNOTEL with a January accumulation of 27.7 inches. Basin averages for the water year are all near to above average with the Olympics reporting the highest at 125% and the Cowlitz-Lewis with the lowest at 93% of average.

| RIVER<br>BASIN              | JANUARY<br>PERCENT OF AVERAGE | WATER YEAR<br>PERCENT OF AVERAGE |
|-----------------------------|-------------------------------|----------------------------------|
| Spokane .....               | 112.....                      | 102                              |
| Colville-Pend Oreille ..... | 106.....                      | 96                               |
| Okanogan-Methow .....       | 69 .....                      | 106                              |
| Wenatchee-Chelan .....      | 73 .....                      | 104                              |
| Upper Yakima .....          | 107.....                      | 108                              |
| Lower Yakima .....          | 99 .....                      | 100                              |
| Walla Walla .....           | 145.....                      | 99                               |
| Lower Snake .....           | 125 .....                     | 106                              |
| Cowlitz-Lewis .....         | 102 .....                     | 93                               |
| White-Green-Puyallup .....  | 107.....                      | 102                              |
| Central Puget Sound .....   | 106.....                      | 108                              |
| North Puget Sound .....     | 94 .....                      | 123                              |
| Olympic Peninsula .....     | 100 .....                     | 125                              |

## Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Upper Yakima Basin was 322,100-acre feet, 72% of average and 91,600-acre feet, 75% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 60% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 69,500 acre feet, 60% of average and 29% of capacity; Chelan Lake, 401,300-acre feet, 127% of average and 59% of capacity; and the Skagit River reservoirs at 99% of average and 70% of capacity.

| BASIN                       | PERCENT OF CAPACITY | CURRENT STORAGE AS<br>PERCENT OF AVERAGE |
|-----------------------------|---------------------|--|
| Spokane .....               | 29 .....            | 60                                       |
| Colville-Pend Oreille ..... | N/A.....            | N/A                                      |
| Okanogan-Methow .....       | 42 .....            | 60                                       |
| Wenatchee-Chelan .....      | 59 .....            | 127                                      |
| Upper Yakima .....          | 39 .....            | 72                                       |
| Lower Yakima .....          | 40 .....            | 75                                       |
| North Puget Sound .....     | 70 .....            | 99                                       |

*For more information contact your local Natural Resources Conservation Service office.*

## Streamflow

February forecasts vary from 114% of average for Mill Creek at Walla Walla to 77% of average for Chamokane Creek near Long Lake. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 103%; Green River, 103%; and Skagit River, 102%. Some Eastern Washington streams include the Yakima River near Parker, 102%; Wenatchee River at Plain, 96%; and Spokane River near Post Falls, 111%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions.

Statewide January streamflows also varied. The South Fork Walla Walla River near Milton, OR had the highest reported flows with 118% of average. The Yakima River at Kiona with 44% of average was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz at Castle Rock, 94%; the Spokane at Spokane, 48%; the Columbia below Rock Island Dam, 75%; and the Cle Elum near Roslyn, 60%.

### BASIN

### PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)

|                             |         |
|-----------------------------|---------|
| Spokane .....               | 110-111 |
| Colville-Pend Oreille ..... | 77-95   |
| Okanogan-Methow .....       | 82-94   |
| Wenatchee-Chelan .....      | 84-105  |
| Upper Yakima .....          | 79-97   |
| Lower Yakima .....          | 89-104  |
| Walla Walla .....           | 109-114 |
| Lower Snake .....           | 98-111  |
| Cowlitz-Lewis .....         | 89-106  |
| White-Green-Puyallup .....  | 100-103 |
| Central Puget Sound .....   | 103-106 |
| North Puget Sound .....     | 96-102  |
| Olympic Peninsula .....     | 101-105 |

### STREAM

### PERCENT OF AVERAGE JANUARY STREAMFLOWS

|  |     |
|--|-----|
| Pend Oreille Below Box Canyon .....        | 60  |
| Kettle at Laurier .....                    | 74  |
| Columbia at Birchbank .....                | 89  |
| Spokane at Long Lake .....                 | 49  |
| Similkameen at Nighthawk .....             | 82  |
| Okanogan at Tonasket .....                 | 79  |
| Methow at Pateros .....                    | 98  |
| Chelan at Chelan .....                     | 78  |
| Wenatchee at Pashastin .....               | 71  |
| Yakima at Cle Elum .....                   | 63  |
| Yakima at Parker .....                     | 54  |
| Naches at Naches .....                     | 55  |
| Grande Ronde at Troy .....                 | 55  |
| Snake below Lower Granite Dam .....        | 54  |
| SF Walla Walla near Milton Freewater ..... | 118 |
| Columbia River at The Dalles .....         | 70  |
| Lewis at Ariel .....                       | 102 |
| Cowlitz below Mayfield Dam .....           | 88  |
| Skagit at Concrete .....                   | 85  |

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# BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2004

| SNOW COURSE          | ELEVATION | DATE    | SNOW<br>DEPTH | WATER<br>CONTENT | LAST<br>YEAR | AVERAGE<br>1971-00 |
|----------------------|-----------|---------|---------------|------------------|--------------|--------------------|
| ANTANUM R.S.         | 3100      | 1/27/04 | 20            | 6.6              | 6.0          | 7.1                |
| ALPINE MEADOWS SNTL  | 3500      | 2/01/04 | 88            | 37.2             | 3.1          | 29.2               |
| ASHLEY DIVIDE        | 4820      | 1/27/04 | 24            | 5.0              | 1.8          | 5.1                |
| BADGER PASS SNOTEL   | 6900      | 2/01/04 | 78            | 20.9             | 13.0         | 22.3               |
| BARKER LAKES SNOTEL  | 8250      | 2/01/04 | 32            | 7.8              | 7.3          | 9.2                |
| BARNES CREEK CAN.    | 5320      | 2/02/04 | 54            | 13.8             | 15.7         | 14.4               |
| BASIN CREEK SNOTEL   | 7180      | 2/01/04 | 21            | 4.5              | 4.1          | 4.9                |
| BEAVER CREEK TRAIL   | 2200      | 1/28/04 | 40            | 13.1             | 8.9          | 10.3               |
| BEAVER PASS          | 3680      | 1/28/04 | 57            | 20.4             | 13.9         | 19.3               |
| BERNE-MILL CREEK (d) | 3170      | 2/02/04 | 68            | 18.6             | 13.9         | 20.2               |
| BIG WHITE MTN CAN.   | 5510      | 2/02/04 | 51            | 12.6             | 10.8         | 13.3               |
| BLACK PINE SNOTEL    | 7100      | 2/01/04 | 28            | 6.7              | 6.4          | 8.0                |
| BLEWETT PASS #2      | 4270      | 1/27/04 | 31            | 9.6              | 10.8         | 11.5               |
| BLEWETT PASS#2SNOTEL | 4270      | 2/01/04 | 31            | 8.9              | 9.8          | 12.4               |
| BRIEF                | 1600      | 1/30/04 | 17            | 4.6              | 6.9          | 6.0                |
| BROWN TOP AM         | 6000      | 1/28/04 | 109           | 37.0             | 30.0         | 42.5               |
| BUMPING LAKE (NEW)   | 3400      | 1/29/04 | 39            | 12.8             | 12.2         | 13.3               |
| BUMPING RIDGE SNOTEL | 4600      | 2/01/04 | 73            | 22.0             | 13.9         | 19.4               |
| BUNCHGRASS MDWSNOTEL | 5000      | 2/01/04 | ---           | 20.1             | 19.9         | 18.6               |
| CHESSMAN RESERVOIR   | 6200      | 1/27/04 | 13            | 2.3              | 1.0          | 2.5                |
| CHICKEN CREEK        | 4060      | 1/27/04 | 60            | 17.2             | 8.8          | 11.5               |
| CHIKWAUKUM G.S.      | 2500      | 2/02/04 | 26            | 6.9              | 6.2          | 8.6                |
| COLOCKUM PASS        | 5370      | 1/28/04 | 38            | 12.0             | 12.1         | 11.7               |
| COMBINATION SNOTEL   | 5600      | 2/01/04 | 12            | 3.8              | 4.0          | 3.4                |
| COPPER BOTTOM SNOTEL | 5200      | 2/01/04 | 43            | 9.0              | 5.4          | 8.0                |
| COPPER MOUNTAIN      | 7700      | 1/25/04 | 35            | 5.5              | 3.5          | 7.0                |
| CORRAL PASS SNOTEL   | 6000      | 2/01/04 | ---           | 26.3             | 16.2         | 22.1               |
| COUGAR MTN. SNOTEL   | 3200      | 2/01/04 | 32            | 10.3             | 0            | 13.7               |
| COX VALLEY           | 4500      | 1/31/04 | 78            | 26.1             | 15.7         | 24.2               |
| COYOTE HILL          | 4200      | 1/26/04 | 33            | 7.8              | 3.6          | 7.3                |
| DALY CREEK SNOTEL    | 5780      | 2/01/04 | 31            | 7.9              | 6.8          | 7.4                |
| DEVILS PARK          | 5900      | 1/29/04 | 86            | 29.4             | 18.8         | 30.7               |
| DISCOVERY BASIN      | 7050      | 1/28/04 | 31            | 6.7              | 5.4          | 6.6                |
| DIX HILL             | 6400      | 2/01/04 | 27            | 6.9              | 4.6          | 7.6                |
| DOMMERIE FLATS       | 2200      | 1/29/04 | 21            | 7.1              | 5.4          | 6.4                |
| EAST RAGGED SADDLE   | 3740      | 1/31/04 | 51            | 16.0             | 8.2          | 14.6               |
| ELBOW LAKE SNOTEL    | 3200      | 2/01/04 | ---           | 32.9             | 7.8          | 20.4               |
| EMERY CREEK SNOTEL   | 4350      | 2/01/04 | 55            | 13.3             | 7.5          | 10.5               |
| ENDERBY CAN.         | 5800      | 1/31/04 | 78            | 21.3             | 21.5         | 27.2               |
| FARRON CAN.          | 4000      | 1/26/04 | 36            | 8.4              | 8.3          | 8.7                |
| FISH CREEK           | 8000      | 1/27/04 | 23            | 5.8              | 4.0          | 5.8                |
| FISH LAKE            | 3370      | 1/29/04 | 71            | 22.0             | 14.8         | 24.5               |
| FISH LAKE SNOTEL     | 3370      | 2/01/04 | 77            | 22.9             | 15.1         | 24.7               |
| FLATTOP MTN SNOTEL   | 6300      | 2/01/04 | 110           | 29.2             | 25.8         | 31.8               |
| FOURTH OF JULY SUM   | 3200      | 1/28/04 | 40            | 9.4              | 1.1          | 7.1                |
| FREZZROUT CK. TRAIL  | 3500      | 1/29/04 | 32            | 9.8              | 5.0          | 8.8                |
| FROENR MDWS SNOTEL   | 6480      | 2/01/04 | 23            | 5.4              | 4.5          | 5.0                |
| GOAT CREEK           | 3600      | 1/29/04 | 26            | 5.9              | 5.5          | 5.1                |
| GRASS MOUNTAIN #2    | 2900      | 2/02/04 | 30            | 9.7              | 0            | 7.5                |
| GRAVE CRK SNOTEL     | 4300      | 2/01/04 | 54            | 14.3             | 9.3          | 11.7               |
| GREEN LAKE SNOTEL    | 6000      | 2/01/04 | 60            | 16.7             | 14.1         | 15.4               |
| GREYBACK RES CAN.    | 4700      | 2/02/04 | 36            | 7.9              | 6.1          | 6.3                |
| GROUSE CAMP SNOTEL   | 5380      | 2/01/04 | 47            | 13.8             | 14.7         | 14.0               |
| HAMILTON HILL CAN.   | 4550      | 1/31/04 | 40            | 10.2             | 4.3          | 9.9                |
| HAND CREEK SNOTEL    | 5030      | 2/01/04 | 36            | 8.5              | 4.9          | 8.6                |
| HARTS PASS SNOTEL    | 6500      | 2/01/04 | 83            | 26.0             | 21.0         | 31.3               |
| HELL ROARING DIVIDE  | 5770      | 1/30/04 | 74            | 21.3             | 20.7         | 20.7               |
| HERRIG JUNCTION      | 4850      | 1/27/04 | 66            | 18.2             | 15.2         | 18.1               |
| HIGH RIDGE SNOTEL    | 4980      | 2/01/04 | ---           | 23.5             | 8.1          | 16.9               |
| HOLBROOK             | 4530      | 2/02/04 | 29            | 7.0              | 2.0          | 7.2                |
| HOODOO BASIN SNOTEL  | 6050      | 2/01/04 | 102           | 26.9             | 20.1         | 30.1               |
| HUMBOLDT GLCH SNOTEL | 4250      | 2/01/04 | ---           | 11.3             | 2.2          | 9.5                |
| INTERGAARD           | 6450      | 2/01/04 | ---           | 4.5E             | 3.2          | 4.8                |
| ISINTOK LAKE CAN.    | 5100      | 1/28/04 | 26            | 4.8              | 2.2          | 5.2                |
| JUNE LAKE SNOTEL     | 3200      | 2/01/04 | 83            | 20.6             | 5.6          | 28.4               |
| KELLER RIDGE         | 3700      | 1/27/04 | 16            | 3.5              | 4.0          | ---                |
| KELLOGG PEAK         | 5560      | 1/29/04 | 70            | 22.0             | 10.2         | 20.7               |
| KRAFT CREEK SNOTEL   | 4750      | 2/01/04 | 41            | 11.0             | 7.3          | 10.9               |
| LESTER CREEK         | 3100      | 2/02/04 | 48            | 15.0             | 7.0          | 14.2               |
| LOLO PASS SNOTEL     | 5240      | 2/01/04 | 91            | 21.8             | 16.9         | 20.9               |
| LONE PINE SNOTEL     | 3800      | 2/01/04 | ---           | 29.6             | 11.7         | 24.1               |
| LOOKOUT SNOTEL       | 5140      | 2/01/04 | 82            | 23.1             | 11.2         | 21.5               |
| LOST HORSE SNOTEL    | 5000      | 2/01/04 | 46            | 13.9             | 12.7         | 13.1               |
| LOST LAKE SNOTEL     | 6110      | 2/01/04 | ---           | 39.2             | 20.8         | 40.6               |
| LUBRECHT FOREST NO 3 | 5450      | 1/30/04 | 19            | 3.8              | 1.6          | 4.6                |
| LUBRECHT FOREST NO 4 | 4650      | 1/30/04 | 10            | 2.1              | 1.0          | 2.5                |
| LUBRECHT FOREST NO 6 | 4040      | 1/29/04 | 10            | 2.6              | 1.2          | 2.8                |
| LUBRECHT HYDROPLT    | 4200      | 1/29/04 | 16            | 3.2              | 2.1          | 4.2                |
| LUBRECHT SNOTEL      | 4680      | 2/01/04 | 20            | 5.0              | 3.4          | 4.2                |
| LYMAN LAKE SNOTEL    | 5900      | 2/01/04 | ---           | 25.6             | 35.5         | 43.4               |
| LYNN LAKE            | 4000      | 2/02/04 | 44            | 15.7             | 3.3          | 14.5               |
| MARIAS PASS          | 5250      | 1/31/04 | 47            | 13.0             | 4.6          | 11.7               |
| MCCULLOCH CAN.       | 4200      | 1/30/04 | 29            | 5.3              | 2.8          | 4.9                |
| Meadows Cabin        | 1900      | 1/29/04 | 11            | 3.1              | 6            | 5.0                |
| MEADOWS PASS SNOTEL  | 3240      | 2/01/04 | 59            | 21.8             | 8.0          | 19.1               |
| MERRITT              | 2140      | 2/02/04 | 33            | 9.6              | 7.8          | 11.7               |
| MICA CREEK SNOTEL    | 4750      | 2/01/04 | 75            | 22.8             | 9.2          | 18.3               |
| MISSEZULA MTN CAN.   | 5080      | 2/02/04 | 26            | 6.1              | 2.4          | 6.5                |

| SNOW COURSE          | ELEVATION | DATE    | SNOW<br>DEPTH | WATER<br>CONTENT | LAST<br>YEAR | AVERAGE<br>1971-00 |
|----------------------|-----------|---------|---------------|------------------|--------------|--------------------|
| MISSION RIDGE        | 5000      | 1/30/04 | 38            | 10.9             | 13.0         | 11.9               |
| MONASHEE PASS CAN.   | 4500      | 2/02/04 | 39            | 9.4              | 6.6          | 9.6                |
| MORRISSEY RIDGE CAN. | 6100      | 2/01/04 | ---           | 19.5             | 13.0         | 18.6               |
| MORSE LAKE SNOTEL    | 5400      | 2/01/04 | ---           | 37.4             | 33.1         | 36.9               |
| MOSES MOUNTAIN (2)   | 4800      | 1/29/04 | 24            | 6.2              | 10.0         | 12.0               |
| MOSES MTN SNOTEL     | 4800      | 2/01/04 | 26            | 5.9              | 11.5         | 10.4               |
| MOSES PEAK           | 6650      | 1/29/04 | 37            | 10.1             | 20.0         | 9.6                |
| MOSQUITO RDG SNOTEL  | 5200      | 2/01/04 | ---           | 30.4             | 18.0         | 24.6               |
| MOULTON RESERVOIR    | 6850      | 1/27/04 | 30            | 6.4              | 4.3          | 5.2                |
| MOUNT CRAG SNOTEL    | 4050      | 2/01/04 | 44            | 17.5             | 17.4         | 19.3               |
| MT. KOBAY CAN.       | 5500      | 1/31/04 | 28            | 6.0              | 9.0          | 7.9                |
| MOUNT TOLMAN         | 2000      | 1/27/04 | 9             | 2.6              | 3.0          | 3.6                |
| MOUNT GARDNER SNOTEL | 2860      | 2/01/04 | ---           | 13.4             | 1.9          | 12.0               |
| MUTTON CREEK #1      | 5700      | 1/28/04 | 29            | 7.0              | 11.4         | 9.4                |
| N.F. ELK CR SNOTEL   | 6250      | 2/01/04 | 35            | 8.4              | 6.1          | 8.0                |
| NEW HOZOMEN LAKE     | 2800      | 1/28/04 | 24            | 6.0              | 4.2          | 7.8                |
| NEZ PERCE CMP SNOTEL | 5650      | 2/01/04 | 41            | 10.8             | 8.3          | 9.9                |
| NOISY BASIN SNOTEL   | 6040      | 2/01/04 | 95            | 26.0             | 19.3         | 27.0               |
| OLALLIE MDWS SNOTEL  | 3960      | 2/01/04 | 88            | 38.7             | 19.6         | 39.2               |
| OLALLIE MEADOWS      | 3630      | 2/01/04 | ---           | 27.0             | 15.0         | 27.4               |
| OPHIR PARK           | 7150      | 2/01/04 | 34            | 8.6              | 7.2          | 10.6               |
| PARADISE PARK SNOTEL | 5500      | 2/01/04 | ---           | 52.8             | 23.9         | 48.1               |
| PARK CK RIDGE SNOTEL | 4600      | 2/01/04 | 90            | 28.2             | 26.7         | 35.0               |
| PETERSON MDW SNOTEL  | 7200      | 2/01/04 | 26            | 5.8              | 6.0          | 6.1                |
| PIGTAIL PEAK SNOTEL  | 5900      | 2/01/04 | 130           | 42.3             | 27.1         | 34.3               |
| PIKE CREEK SNOTEL    | 5930      | 2/01/04 | 66            | 16.6             | 10.0         | 17.8               |
| PIPESTONE PASS       | 7200      | 1/30/04 | 12            | 2.1              | 2.0          | 3.2                |
| POPE RIDGE SNOTEL    | 3540      | 2/01/04 | 41            | 11.1             | 14.7         | 14.9               |
| POTATO HILL SNOTEL   | 4500      | 2/01/04 | ---           | 22.0             | 10.7         | 18.5               |
| QUARTZ PEAK SNOTEL   | 4700      | 2/01/04 | 57            | 16.8             | 11.1         | 15.4               |
| RAGGED MOUNTAIN      | 4200      | 1/31/04 | 55            | 18.0             | 9.1          | 14.1               |
| RAGGED RIDGE         | 3330      | 1/30/04 | 30            | 7.6              | 2.9          | ---                |
| RAINY PASS SNOTEL    | 4780      | 2/01/04 | 84            | 23.7             | 25.5         | 30.2               |
| REX RIVER SNOTEL     | 1900      | 2/01/04 | ---           | 25.3             | 3.0          | 21.7               |
| ROCKER PEAK SNOTEL   | 8000      | 2/01/04 | 33            | 7.7              | 7.0          | 9.1                |
| RUSTY CREEK          | 4000      | 1/28/04 | 17            | 3.4              | 6.6          | 4.9                |
| SF TEUNDER CK AM     | 2200      | 2/01/04 | ---           | 7.5E             | 2.5          | 5.9                |
| SADDLE MTN SNOTEL    | 7900      | 2/01/04 | 66            | 16.7             | 14.7         | 17.3               |
| SALMON MDWS SNOTEL   | 4500      | 2/01/04 | 27            | 6.6              | 9.3          | 7.5                |
| SASSE RIDGE SNOTEL   | 4200      | 2/01/04 | 56            | 23.2             | 17.2         | 23.8               |
| SAVAGE PASS SNOTEL   | 6170      | 2/01/04 | 85            | 18.1             | 16.7         | 17.6               |
| SAWMILL RIDGE        | 4700      | 2/02/04 | 72            | 24.5             | 9.0          | 22.9               |
| SCHREIBERS MDW AM    | 3400      | 1/29/04 | 107           | 40.6             | 13.0         | 32.4               |
| SHEEP CANYON SNOTEL  | 4050      | 2/01/04 | ---           | 19.6             | 2.5          | 23.9               |
| SHERWIN SNOTEL       | 3200      | 2/01/04 | ---           | 10.6             | 1.8          | 8.4                |
| SILVER STAR MTN CAN. | 5600      | 2/01/04 | 61            | 17.2             | 14.1         | 20.0               |
| SKALAKO SNOTEL       | 7260      | 2/01/04 | 54            | 14.0             | 13.5         | 16.0               |
| SKOOKUM CREEK SNOTEL | 3920      | 2/01/04 | 51            | 21.3             | 0            | 20.2               |
| SOURDOUGH GULCH SNTL | 4000      | 2/01/04 | 2             | 9                | 0            | ---                |
| SPENCER MDW SNOTEL   | 3400      | 2/01/04 | ---           | 24.2             | 8.2          | 21.9               |
| SPIRIT LAKE SNOTEL   | 3100      | 2/01/04 | ---           | 1.5              | 1.1          | ---                |
| SPOTTED BEAR MTN.    | 7000      | 2/02/04 | 40            | 9.7              | 5.4          | 10.1               |
| SOURDOUGH GULCH SNTL | 4000      | 2/01/04 | 2             | 9                | 0            | ---                |
| STAHL PEAK SNOTEL    | 6030      | 2/01/04 | 84            | 23.1             | 19.9         | 24.1               |
| STAMPEDE PASS SNOTEL | 3860      | 2/01/04 | 87            | 30.7             | 17.8         | 31.0               |
| STEMILT SLIDE        | 5000      | 1/29/04 | 33            | 9.6              | 7.0          | 10.4               |
| STEVENS PASS SNOTEL  | 4070      | 2/01/04 | 102           | 28.2             | 17.8         | 30.2               |
| STEVENS PASS SAND SD | 3700      | 2/02/04 | 82            | 23.9             | 15.5         | 24.0               |
| STORM LAKE           | 7780      | 1/28/04 | 31            | 6.8              | 6.1          | 8.3                |
| STRYKER BASIN        | 6180      | 1/27/04 | 69            | 18.4             | 17.6         | 21.3               |
| SUMMERLAND RES CAN.  | 4200      | 1/29/04 | 32            | 6.9              | 2.6          | 6.9                |
| SUNSET SNOTEL        | 5540      | 2/01/04 | ---           | 16.6             | 7.0          | 20.9               |
| SURPRISE LKS SNOTEL  | 4250      | 2/01/04 | ---           | 35.8             | 19.6         | 32.2               |
| TEN MILE LOWER       | 6600      | 1/27/04 | 23            | 4.7              | 3.4          | 4.7                |
| TEN MILE MIDDLE      | 6800      | 1/27/04 | 28            | 5.7              | 4.2          | 7.1                |
| THUNDER BASIN        | 4200      | 2/01/04 | ---           | 13.5E            | 10.8         | 14.5               |
| TINKHAM CREEK SNOTEL | 3000      | 2/01/04 | ---           | 20.0             | 9.4          | 22.7               |
| TOGO                 | 3370      | 1/29/04 | 24            | 6.0              | 5.6          | 7.4                |
| TOUCHET SNOTEL       | 5530      | 2/01/04 | 79            | 24.2             | 12.0         | 23.8               |
| TRINKUS LAKE         | 6100      | 2/02/04 | 85            | 25.7             | 18.0         | 26.6               |
| TROUGH #2 SNOTEL     | 5310      | 2/01/04 | 28            | 7.8              | 11.5         | 7.5                |
| TRUMAN CREEK         | 4060      | 2/03/04 | 17            | 4.0              | 2.2          | 3.5                |
| TUNNEL AVENUE        | 2450      | 1/29/04 | 43            | 16.4             | 8.7          | 14.8               |
| TV MOUNTAIN          | 6800      | 2/02/04 | 44            | 11.8             | 6.3          | 12.0               |
| TWELVEMILE SNOTEL    | 5600      | 2/01/04 | 55            | 14.7             | 8.9          | 12.8               |
| TWIN CAMP            | 4100      | 2/02/04 | 49            | 16.2             | 5.8          | 17.4               |
| TWIN LAKES           | 2700      | 1/28/04 | 23            | 5.4              | 6.0          | 5.4                |
| TWIN LAKES SNOTEL    | 6400      | 2/01/04 | 103           | 30.8             | 21.9         | 27.5               |
| TWIN SPIRIT DIVIDE   | 3480      | 1/31/04 | 34            | 9.6              | 4.0          | 10.5               |
| UPPER HOLLAND LAKE   | 6200      | 2/02/04 | 85            | 24.2             | 14.4         | 23.7               |
| UPPER WHEELER SNOTEL | 4400      | 2/01/04 | 34            | 10.1             | 10.2         | 9.2                |
| WARM SPRINGS SNOTEL  | 7800      | 2/01/04 | 53            | 13.3             | 12.4         | 13.8               |
| WEASEL DIVIDE        | 5450      | 1/29/04 | 76            | 20.6             | 13.5         | 21.5               |
| WELLS CREEK SNOTEL   | 4200      | 2/01/04 | 77            | 25.7             | 12.6         | 17.4               |
| WHITE PASS ES SNOTEL | 4500      | 2/01/04 | 61            | 16.9             | 12.0         | 17.1               |
| WHITE ROCKS MTN CAN. | 7200      | 1/28/04 | 50            | 14.3             | 9.3          | 15.7               |





Natural Resources Conservation Service

Washington State  
Snow, Water and Climate Services

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### Helpful Internet Addresses

#### NRCS Snow Survey and Climate Services Homepages

Washington:  
<http://www.wa.nrcs.usda.gov/snow/snow>

Oregon:  
<http://www.or.nrcs.usda.gov/snow/snow>

Idaho:  
<http://www.id.nrcs.usda.gov/snow>

National Water and Climate Center (NWCC):  
<http://www.wcc.nrcs.usda.gov>

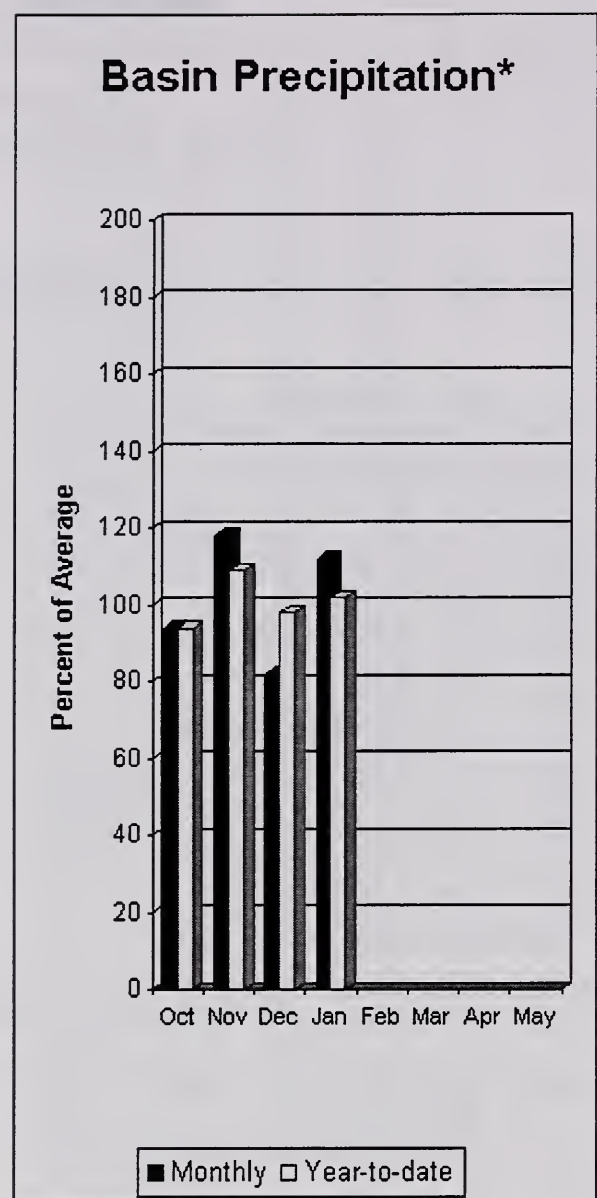
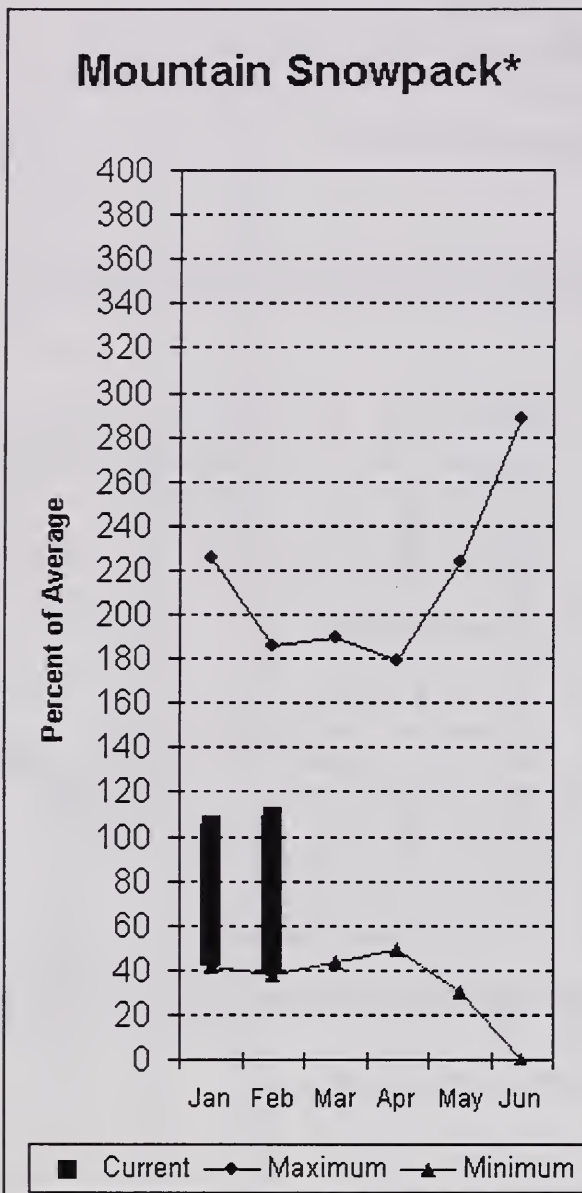
NWCC Anonymous FTP Server:  
<ftp.wcc.nrcs.usda.gov>

#### USDA-NRCS Agency Homepages

Washington:  
<http://www.wa.nrcs.usda.gov/nrcs>

NRCS National:  
<http://www.nrcs.usda.gov>

# Spokane River Basin



\*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 111% of average near Post Falls and 110% at Long Lake. The Chamokane River near Long Lake forecasted to have 77% of average flows for the May-August period. The forecast is based on a basin snowpack that is 109% of average and precipitation that is 102% of average for the water year. Precipitation for January was above normal at 112% of average. Streamflow on the Spokane River at Long Lake was 49% of average for January. February 1 storage in Coeur d'Alene Lake was 69,500-acre feet, 60% of average and 29% of capacity. Snowpack at Quartz Peak SNOTEL site was 109% of average with 16.8 inches of water content. Temperatures in the Spokane basin were near average for the past 28 days and for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Spokane River Basin

## SPOKANE RIVER BASIN Streamflow Forecasts - February 1, 2004

|                             |                 | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |  |     |                 |                 |                        |
|-----------------------------|-----------------|--|-----------------|--|-----|-----------------|-----------------|------------------------|
| Forecast Point              | Forecast Period | ===== Chance Of Exceeding * =====                          |                 |  |     |                 |                 | 30-Yr Avg.<br>(1000AF) |
|                             |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) (% AVG.) |     | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| =====                       |                 | =====  |                 | =====                                    |     | =====           |                 | =====                  |
| SPOKANE near Post Falls (2) | APR-SEP         | 2340   | 2700            | 2940                                     | 111 | 3180            | 3540            | 2650                   |
|                             | APR-JUL         | 2250   | 2590            | 2830                                     | 111 | 3070            | 3410            | 2550                   |
| SPOKANE at Long Lake (2)    | APR-JUL         | 2460   | 2860            | 3130                                     | 110 | 3400            | 3800            | 2850                   |
|                             | APR-SEP         | 2670   | 3090            | 3370                                     | 110 | 3650            | 4070            | 3070                   |

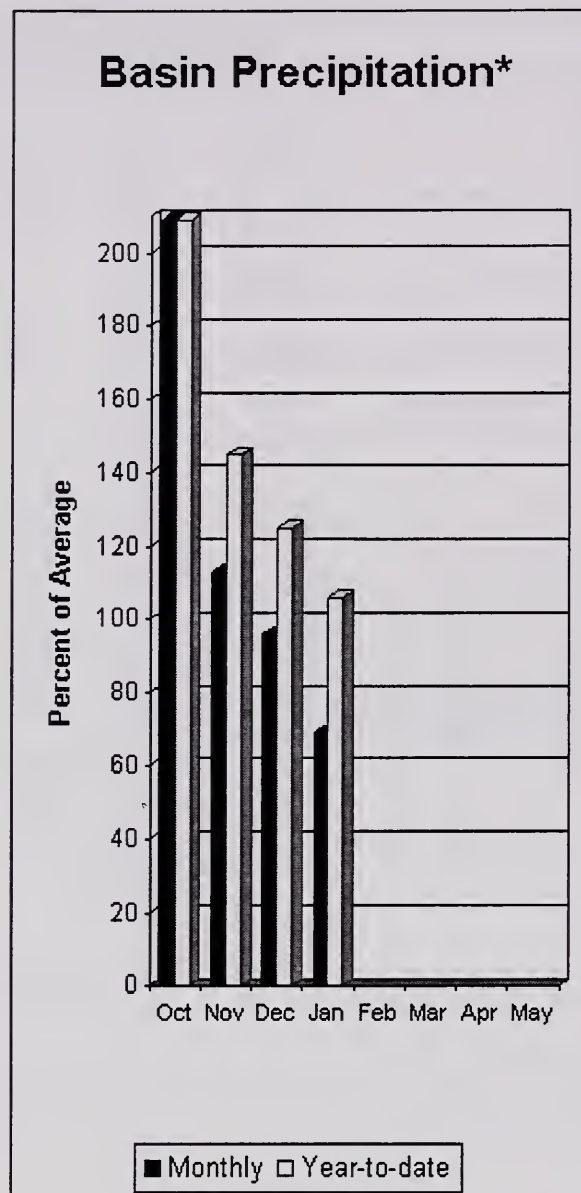
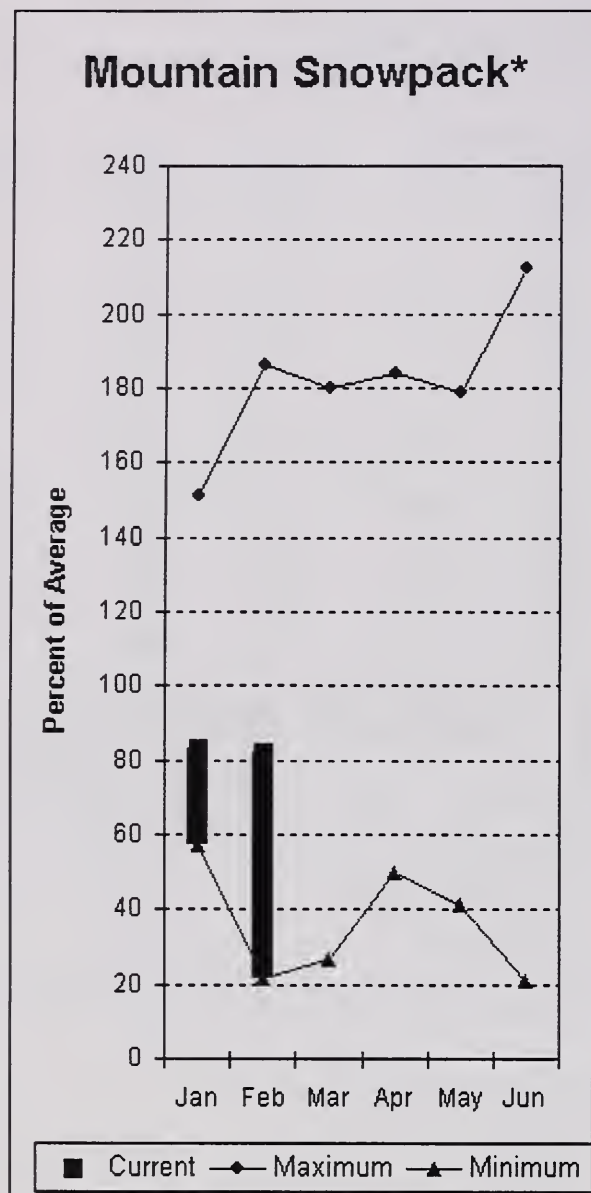
| SPOKANE RIVER BASIN<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | SPOKANE RIVER BASIN<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|---|-----------------|------------------------|-----------|-------|---|----------------------|-------------------|---------|
| Reservoir   | Usable Capacity | *** Usable Storage *** |           |       | Watershed   | Number of Data Sites | This Year as % of |         |
|   |                 | This Year              | Last Year | Avg   |   |                      | Last Yr           | Average |
| COEUR D'ALENE   | 238.5           | 69.5                   | 142.5     | 115.6 | SPOKANE RIVER   | 13                   | 217               | 109     |
|   |                 |                        |           |       | NEWMAN LAKE   | 1                    | 174               | 109     |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Okanogan - Methow River Basins



\*Based on selected stations

Summer runoff average forecast for the Okanogan River is 85%, Similkameen River is 91%, Methow River is 94% and Salmon Creek is 82%. February 1 snow cover on the Okanogan was 88% of average, Omak Creek was 69% and the Methow was 80%. January precipitation in the Okanogan-Methow was 69% of average, with precipitation for the water year at 106% of average. January streamflow for the Methow River was 98% of average, 79% for the Okanogan River and 82% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 6.6 inches. Average for this site is 7.5 inches on February 1. Combined storage in the Conconully Reservoirs was 9,900-acre feet, which is 42% of capacity and 60% of the February 1 average. Temperatures were 2-3 degrees above average for the past 28 days and 1 degree above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Okanogan - Methow River Basins

## Streamflow Forecasts - February 1, 2004

|                                  |                 | <----- Drier ----->               |                 |  |    | Future Conditions |                 | >----- Wetter -----> |  |                        |  |
|----------------------------------|-----------------|-----------------------------------|-----------------|--|----|-------------------|-----------------|----------------------|--|------------------------|--|
| Forecast Point                   | Forecast Period | ===== Chance Of Exceeding * ===== |                 |  |    |                   |                 |                      |  | 30-Yr Avg.<br>(1000AF) |  |
|                                  |                 | 90%<br>(1000AF)                   | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) (% AVG.) |    | 30%<br>(1000AF)   | 10%<br>(1000AF) |                      |  |                        |  |
| =====                            |                 |                                   |                 |  |    |                   |                 |                      |  |                        |  |
| SIMILKAMEEN near Nighthawk (1)   | APR-JUL         | 900                               | 1130            | 1230                                     | 91 | 1330              | 1560            | 1350                 |  |                        |  |
|                                  | APR-SEP         | 735                               | 1140            | 1320                                     | 91 | 1500              | 1910            | 1450                 |  |                        |  |
| OKANOGAN near Tonasket (1)       | APR-JUL         | 645                               | 1130            | 1350                                     | 85 | 1570              | 2050            | 1580                 |  |                        |  |
|                                  | APR-SEP         | 705                               | 1260            | 1510                                     | 85 | 1760              | 2310            | 1770                 |  |                        |  |
| SALMON CREEK near Conconully     | APR-JUL         | 15.6                              | 16.3            | 16.8                                     | 84 | 17.3              | 18.0            | 20                   |  |                        |  |
|                                  | APR-SEP         | 16.1                              | 16.8            | 17.3                                     | 82 | 17.8              | 18.5            | 21                   |  |                        |  |
| BEAVER CREEK below SF near Twisp | APR-SEP         | 3.5                               | 7.3             | 9.9                                      | 82 | 12.5              | 16.3            | 12.1                 |  |                        |  |
|                                  | APR-JUL         | 3.1                               | 6.8             | 9.3                                      | 84 | 11.8              | 15.5            | 11.1                 |  |                        |  |
| METHOW RIVER near Pateros        | APR-SEP         | 610                               | 795             | 925                                      | 94 | 1055              | 1245            | 985                  |  |                        |  |
|                                  | APR-JUL         | 685                               | 785             | 855                                      | 94 | 925               | 1025            | 910                  |  |                        |  |

### OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of January

### OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - February 1, 2004

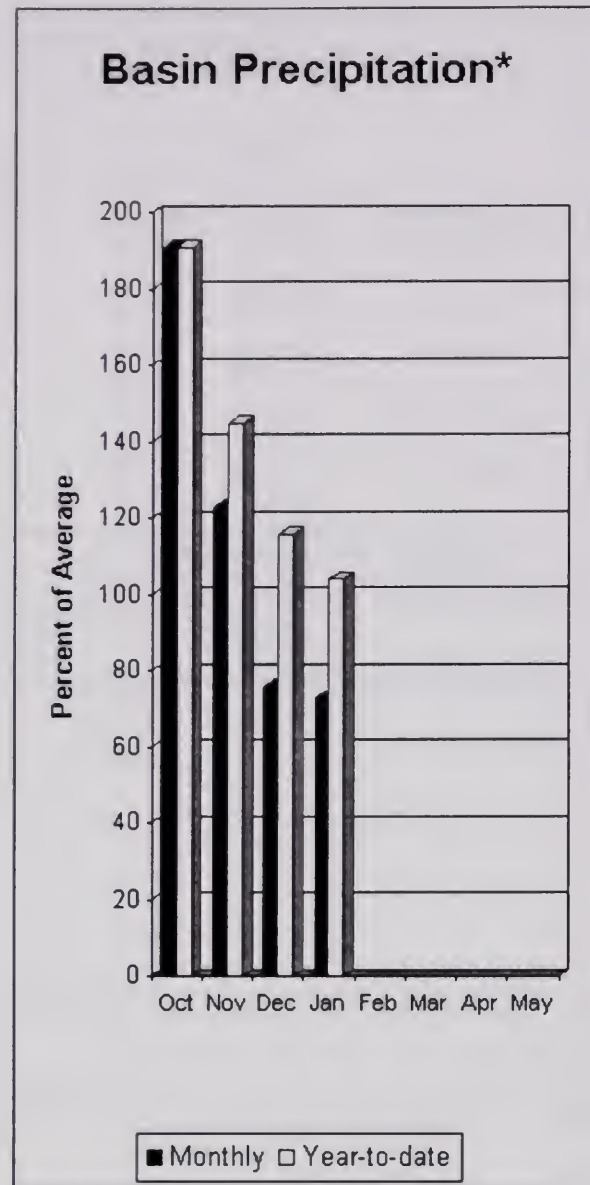
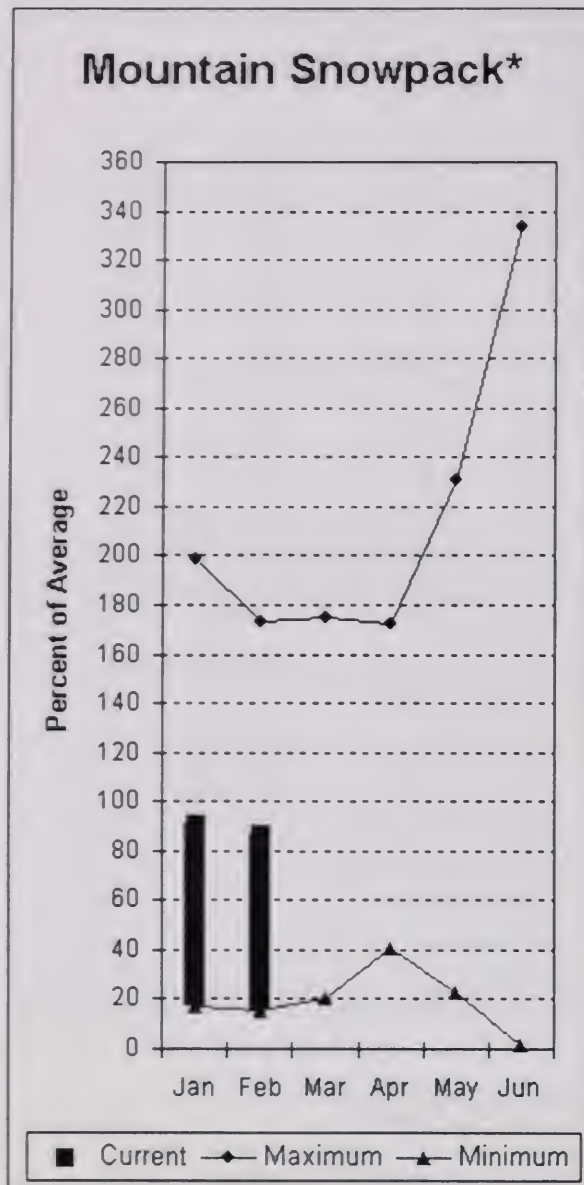
| Reservoir            | Usable Capacity | *** Usable Storage *** |           |     | Watershed          | Number of Data Sites | This Year as % of |         |
|----------------------|-----------------|------------------------|-----------|-----|--------------------|----------------------|-------------------|---------|
|                      |                 | This Year              | Last Year | Avg |                    |                      | Last Yr           | Average |
| SALMON LAKE          |                 | NO REPORT              |           |     | OKANOGAN RIVER     | 14                   | 114               | 88      |
| CONCONULLY RESERVOIR |                 | NO REPORT              |           |     | OMAK CREEK         | 1                    | 51                | 57      |
|                      |                 |                        |           |     | SANPOIL RIVER      | 0                    | 0                 | 0       |
|                      |                 |                        |           |     | SIMILKAMEEN RIVER  | 2                    | 243               | 99      |
|                      |                 |                        |           |     | TOATS COULEE CREEK | 1                    | 75                | 69      |
|                      |                 |                        |           |     | CONCONULLY LAKE    | 3                    | 62                | 78      |
|                      |                 |                        |           |     | METHOW RIVER       | 5                    | 90                | 80      |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Wenatchee - Chelan River Basins



\*Based on selected stations

Precipitation during January was 73% of average in the basin and 104% for the year-to-date. Runoff for Entiat River is forecast to be 85% of average for the summer. The February-September average forecast for Chelan River is 87%, Wenatchee River at Plain is 96% and Stehekin is 84%. Icicle, Stemilt and Squilchuck creeks are all forecasted to have near average flows. January average streamflows on the Chelan River were 78% and on the Wenatchee River 71%. February 1 snowpack in the Wenatchee River Basin was 85% of average; the Chelan, 73%; the Entiat, 75%; Stemilt Creek, 101% and Colockum Creek, 103%. Reservoir storage in Lake Chelan was 401,300-acre feet, 127% of February 1 average and 59% of capacity. Miners Ridge SNOTEL had the most snow water with 28.8 inches of water. This site would normally have 36.2 inches on February 1. Temperatures were 1 degree below normal for the past 28 days and near normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Wenatchee - Chelan River Basins

## Streamflow Forecasts - February 1, 2004

| Forecast Point                       | Forecast Period | <<===== Drier =====>> |                 | Future Conditions               |          | ===== Wetter =====>> |                 | 30-Yr Avg.<br>(1000AF) |
|--------------------------------------|-----------------|-----------------------|-----------------|---------------------------------|----------|----------------------|-----------------|------------------------|
|                                      |                 | =====                 |                 | Chance Of Exceeding *           |          | =====                |                 |                        |
|                                      |                 | 90%<br>(1000AF)       | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF)      | 10%<br>(1000AF) |                        |
| CHELAN RIVER near Chelan             | APR-SEP         | 855                   | 960             | 1030                            | 87       | 1100                 | 1210            | 1190                   |
|                                      | APR-JUL         | 760                   | 850             | 910                             | 87       | 970                  | 1060            | 1050                   |
| STEHEKIN near STEHEKIN               | APR-SEP         | 585                   | 655             | 700                             | 84       | 745                  | 815             | 830                    |
|                                      | APR-JUL         | 510                   | 565             | 600                             | 86       | 635                  | 690             | 700                    |
| ENTIAT RIVER nr Ardenvoir            | APR-SEP         | 163                   | 188             | 205                             | 85       | 220                  | 245             | 240                    |
|                                      | APR-JUL         | 150                   | 173             | 188                             | 87       | 205                  | 225             | 215                    |
| WENATCHEE at Plain                   | APR-SEP         | 950                   | 1060            | 1130                            | 96       | 1200                 | 1310            | 1180                   |
|                                      | APR-JUL         | 890                   | 970             | 1020                            | 94       | 1070                 | 1150            | 1080                   |
| WENATCHEE R. at Peshastin            | APR-SEP         | 1119                  | 1381            | 1560                            | 95       | 1739                 | 2000            | 1640                   |
|                                      | APR-JUL         | 899                   | 1203            | 1410                            | 95       | 1615                 | 1920            | 1480                   |
| STEMILT CK nr Wenatchee (miner's in) | MAY-SEP         | 91                    | 123             | 145                             | 105      | 167                  | 199             | 138                    |
| ICICLE CREEK near Leavenworth        | APR-SEP         | 305                   | 330             | 345                             | 100      | 360                  | 385             | 345                    |
|                                      | APR-JUL         | 285                   | 305             | 320                             | 100      | 335                  | 355             | 320                    |
| COLUMBIA R. bl Rock Island Dam (2)   | APR-SEP         | 56151                 | 62730           | 67200                           | 95       | 71670                | 78250           | 70500                  |
|                                      | APR-JUL         | 45588                 | 52442           | 57100                           | 96       | 61760                | 68610           | 59700                  |

| WENATCHEE - CHELAN RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | WENATCHEE - CHELAN RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|---|-----------------|------------------------|-----------|-------|---|----------------------|-------------------|---------|
| Reservoir   | Usable Capacity | *** Usable Storage *** |           |       | Watershed   | Number of Data Sites | This Year as % of |         |
|   |                 | This Year              | Last Year | Avg   |   |                      | Last Yr           | Average |
| CHELAN LAKE   | 676.1           | 401.3                  | 314.1     | 315.5 | CHELAN LAKE BASIN   | 4                    | 96                | 73      |
|   |                 |                        |           |       | ENTIAT RIVER  | 2                    | 73                | 75      |
|   |                 |                        |           |       | WENATCHEE RIVER   | 13                   | 113               | 85      |
|   |                 |                        |           |       | SQUILCHUCK CREEK  | 0                    | 0                 | 0       |
|   |                 |                        |           |       | STEMILT CREEK   | 2                    | 115               | 101     |
|   |                 |                        |           |       | COLOCKUM CREEK  | 2                    | 84                | 103     |

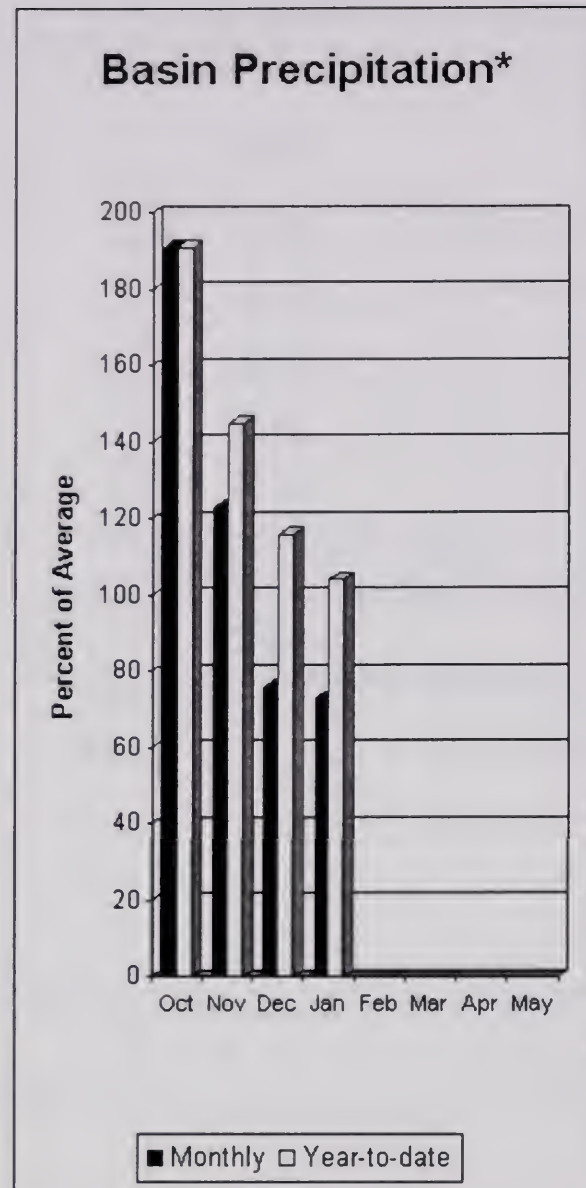
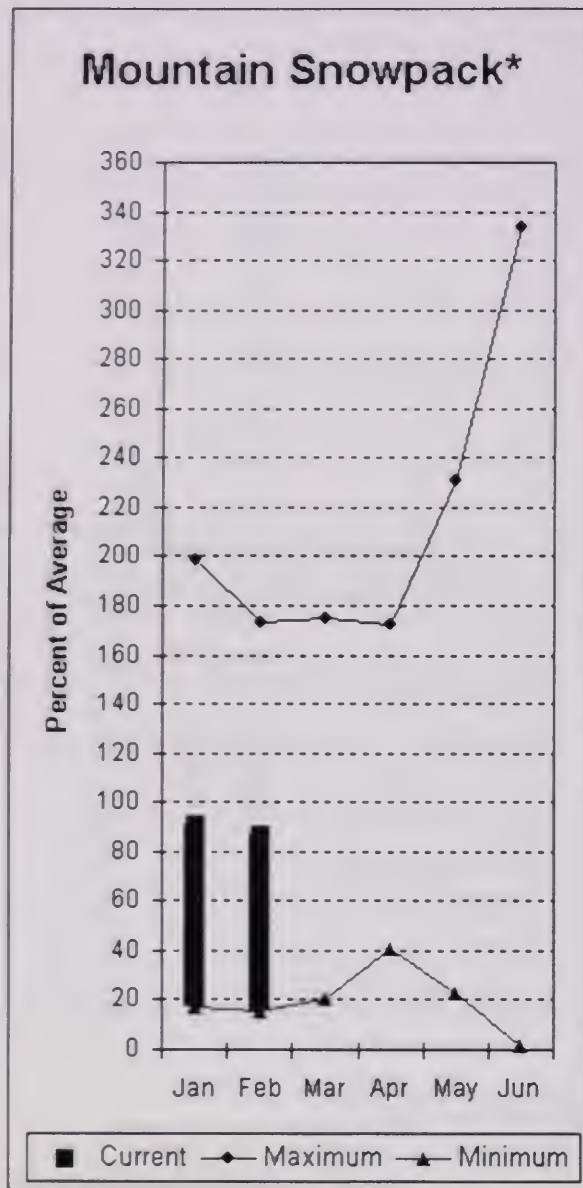
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## Wenatchee - Chelan River Basins



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Precipitation during January was 73% of average in the basin and 104% for the year-to-date. Runoff for Entiat River is forecast to be 85% of average for the summer. The February-September average forecast for Chelan River is 87%, Wenatchee River at Plain is 96% and Stehekin is 84%. Icicle, Stemilt and Squilchuck creeks are all forecasted to have near average flows. January average streamflows on the Chelan River were 78% and on the Wenatchee River 71%. February 1 snowpack in the Wenatchee River Basin was 85% of average; the Chelan, 73%; the Entiat, 75%; Stemilt Creek, 101% and Colockum Creek, 103%. Reservoir storage in Lake Chelan was 401,300-acre feet, 127% of February 1 average and 59% of capacity. Miners Ridge SNOTEL had the most snow water with 28.8 inches of water. This site would normally have 36.2 inches on February 1. Temperatures were 1 degree below normal for the past 28 days and near normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Wenatchee - Chelan River Basins

## Streamflow Forecasts - February 1, 2004

| Forecast Point                       | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====> |                 |                                 |          |                 |                 | 30-Yr Avg.<br>(1000AF) |
|--------------------------------------|-----------------|---|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
|                                      |                 | =====   |                 | Chance Of Exceeding *           |          | =====           |                 |                        |
|                                      |                 | 90%<br>(1000AF)   | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| CHELAN RIVER near Chelan             | APR-SEP         | 855   | 960             | 1030                            | 87       | 1100            | 1210            | 1190                   |
|                                      | APR-JUL         | 760   | 850             | 910                             | 87       | 970             | 1060            | 1050                   |
| STEHEKIN near STEHEKIN               | APR-SEP         | 585   | 655             | 700                             | 84       | 745             | 815             | 830                    |
|                                      | APR-JUL         | 510   | 565             | 600                             | 86       | 635             | 690             | 700                    |
| ENTIAT RIVER nr Ardenvoir            | APR-SEP         | 163   | 188             | 205                             | 85       | 220             | 245             | 240                    |
|                                      | APR-JUL         | 150   | 173             | 188                             | 87       | 205             | 225             | 215                    |
| WENATCHEE at Plain                   | APR-SEP         | 950   | 1060            | 1130                            | 96       | 1200            | 1310            | 1180                   |
|                                      | APR-JUL         | 890   | 970             | 1020                            | 94       | 1070            | 1150            | 1080                   |
| WENATCHEE R. at Peshastin            | APR-SEP         | 1119  | 1381            | 1560                            | 95       | 1739            | 2000            | 1640                   |
|                                      | APR-JUL         | 899   | 1203            | 1410                            | 95       | 1615            | 1920            | 1480                   |
| STEMILT CK nr Wenatchee (miner's in) | MAY-SEP         | 91  | 123             | 145                             | 105      | 167             | 199             | 138                    |
| ICICLE CREEK near Leavenworth        | APR-SEP         | 305   | 330             | 345                             | 100      | 360             | 385             | 345                    |
|                                      | APR-JUL         | 285   | 305             | 320                             | 100      | 335             | 355             | 320                    |
| COLUMBIA R. bl Rock Island Dam (2)   | APR-SEP         | 56151   | 62730           | 67200                           | 95       | 71670           | 78250           | 70500                  |
|                                      | APR-JUL         | 45588   | 52442           | 57100                           | 96       | 61760           | 68610           | 59700                  |

| WENATCHEE - CHELAN RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | WENATCHEE - CHELAN RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|---|-----------------|------------------------|-----------|-------|---|----------------------|-------------------|---------|
| Reservoir   | Usable Capacity | *** Usable Storage *** |           |       | Watershed   | Number of Data Sites | This Year as % of |         |
|   |                 | This Year              | Last Year | Avg   |   |                      | Last Yr           | Average |
| CHELAN LAKE   | 676.1           | 401.3                  | 314.1     | 315.5 | CHELAN LAKE BASIN   | 4                    | 96                | 73      |
|   |                 |                        |           |       | ENTIAT RIVER  | 2                    | 73                | 75      |
|   |                 |                        |           |       | WENATCHEE RIVER   | 13                   | 113               | 85      |
|   |                 |                        |           |       | SQUILCHUCK CREEK  | 0                    | 0                 | 0       |
|   |                 |                        |           |       | STEMILT CREEK   | 2                    | 115               | 101     |
|   |                 |                        |           |       | COLOCKUM CREEK  | 2                    | 84                | 103     |

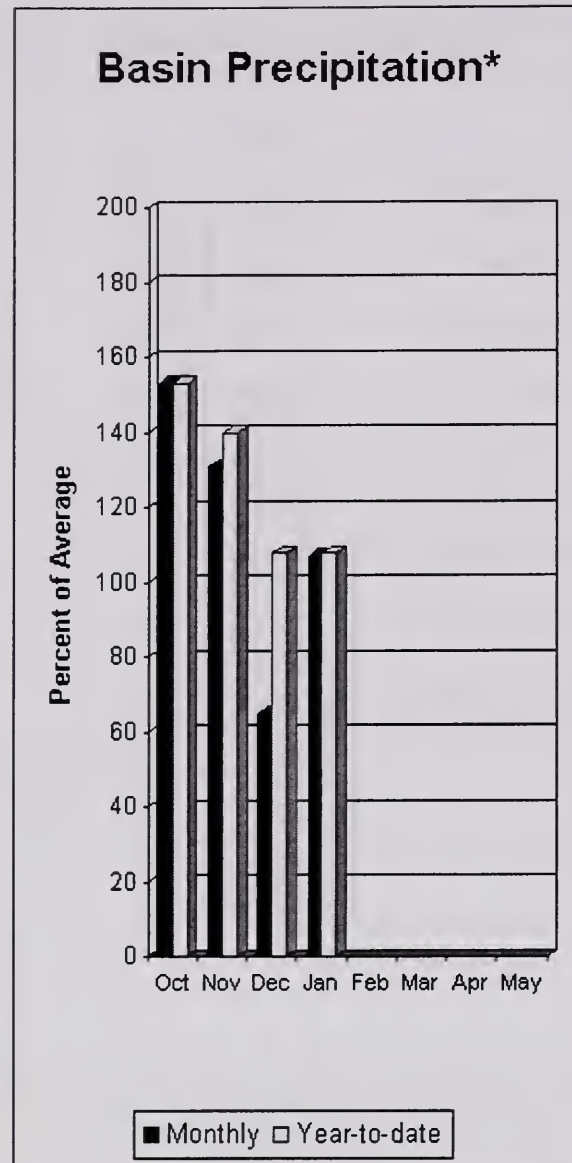
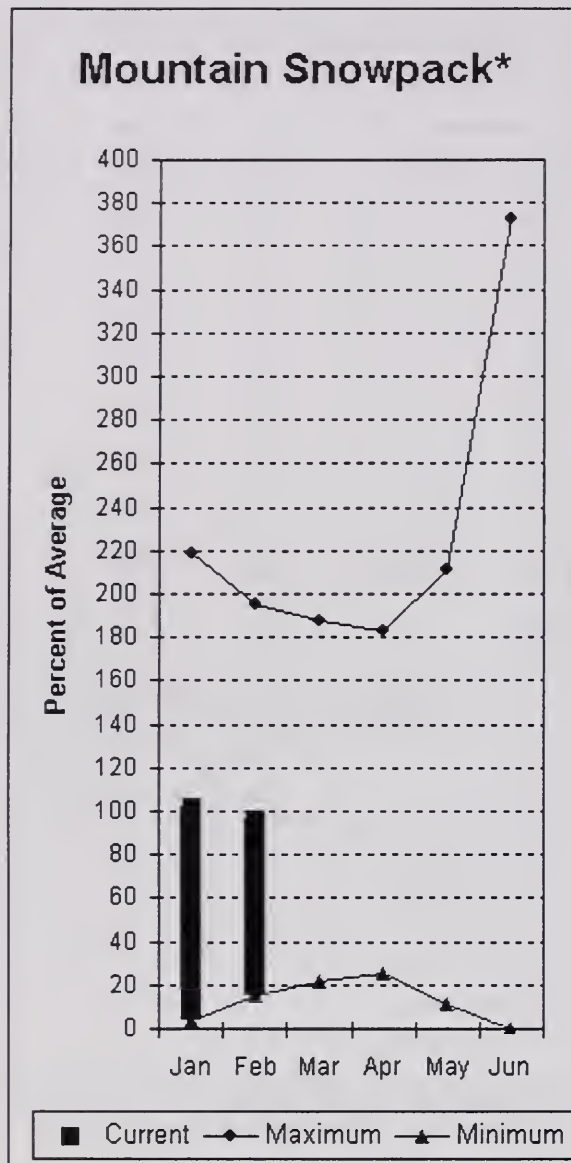
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

# Upper Yakima River Basin



\*Based on selected stations

February 1 reservoir storage for the Upper Yakima reservoirs was 322,100-acre feet, 72% of average. Forecasts for the Yakima River at Cle Elum are 95% of average and the Teanaway River near Cle Elum is at 79%. Lake inflows are all forecasted to be near normal this summer. January streamflows within the basin were Yakima near Cle Elum at 63% and Cle Elum River near Roslyn at 60%. February 1 snowpack was 96% based upon 12 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 107% of average for January and 108% year-to-date for water. Temperatures were 1 degrees below normal for the past 28 days and near average for the water year. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Upper Yakima River Basin

## Streamflow Forecasts - February 1, 2004

|                        |                 | <<===== Drier ===== Future Conditions ===== Wetter =====>> |              |                              |          |              |              |                    |
|------------------------|-----------------|--|--------------|------------------------------|----------|--------------|--------------|--------------------|
| Forecast Point         | Forecast Period | Chance Of Exceeding *                                      |              |                              |          |              |              | 30-Yr Avg (1000AF) |
|                        |                 | 90% (1000AF)   | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) |                    |
| KEECHELUS LAKE INFLOW  | APR-JUL         | 93   | 107          | 117                          | 97       | 127          | 141          | 121                |
|                        | APR-SEP         | 103  | 118          | 129                          | 97       | 140          | 155          | 133                |
| KACHESS LAKE INFLOW    | APR-JUL         | 85   | 97           | 105                          | 95       | 113          | 125          | 111                |
|                        | APR-SEP         | 91   | 104          | 113                          | 94       | 122          | 135          | 120                |
| CLE ELUM LAKE INFLOW   | APR-JUL         | 330  | 365          | 390                          | 95       | 415          | 450          | 410                |
|                        | APR-SEP         | 355  | 395          | 425                          | 94       | 455          | 495          | 450                |
| YAKIMA at Cle Elum     | APR-JUL         | 655  | 730          | 780                          | 95       | 830          | 905          | 820                |
|                        | APR-SEP         | 720  | 800          | 855                          | 95       | 910          | 990          | 900                |
| TEANAWAY near Cle Elum | APR-JUL         | 88   | 102          | 112                          | 78       | 122          | 136          | 143                |
|                        | APR-SEP         | 91   | 105          | 115                          | 79       | 125          | 139          | 146                |

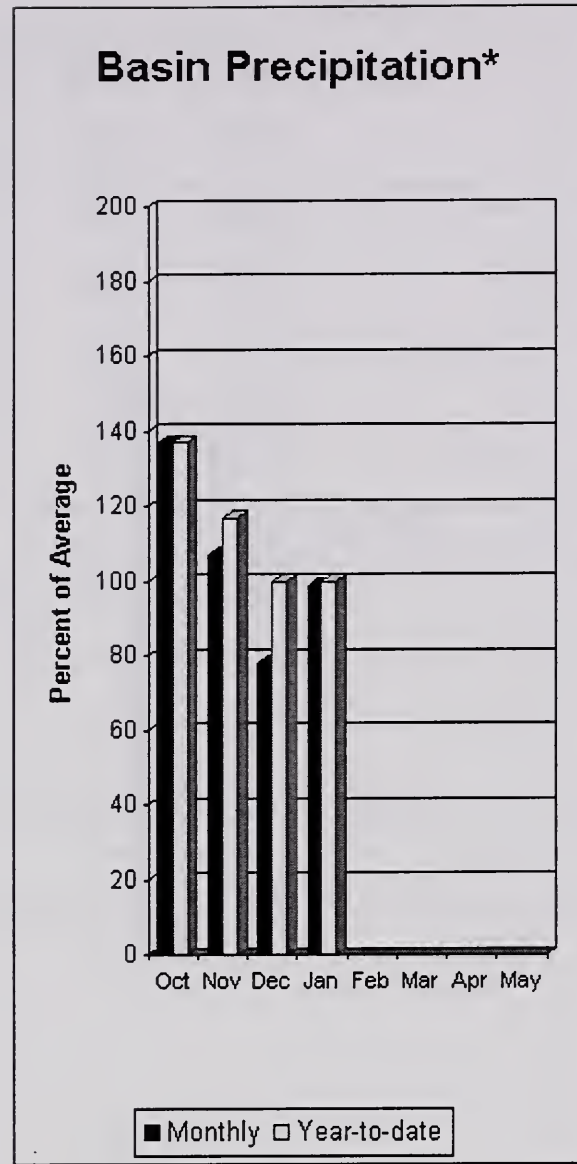
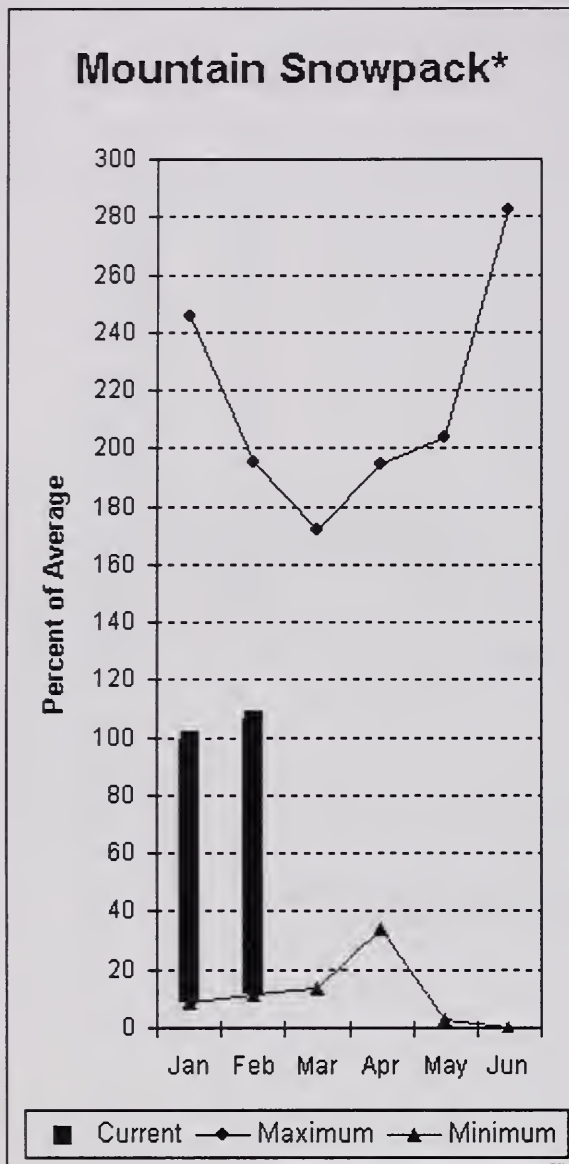
| UPPER YAKIMA RIVER BASIN<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | UPPER YAKIMA RIVER BASIN<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|--|-----------------|------------------------|-----------|-------|--|----------------------|-------------------|---------|
| Reservoir  | Usable Capacity | *** Usable Storage *** |           |       | Watershed  | Number of Data Sites | This Year as % of |         |
|  |                 | This Year              | Last Year | Avg   |  |                      | Last Yr           | Average |
| KEECHELUS  | 157.8           | 62.0                   | 41.1      | 89.9  | UPPER YAKIMA RIVER   | 12                   | 144               | 96      |
| KACHESS  | 239.0           | 101.5                  | 137.5     | 139.4 |  |                      |                   |         |
| CLE ELUM   | 436.9           | 158.6                  | 190.2     | 215.4 |  |                      |                   |         |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Lower Yakima River Basin



\*Based on selected stations

January average streamflows within the basin were: Yakima River near Parker, 54%; Naches River near Naches, 55%; and Yakima River at Kiona, 44%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 91,600-acre feet, 75% of average. Forecast averages for Yakima River near Parker are 102%; American River near Nile, 103%; Ahtanum Creek, 100%; and Klickitat River near Glenwood, 89%. February 1 snowpack was 106% based upon 7 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 99% of average for January and 100% year-to-date for water. Temperatures were 1 degree below normal for the past 28 days and near average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

*For more information contact your local Natural Resources Conservation Service office.*



# Lower Yakima River Basin

## Streamflow Forecasts - February 1, 2004

|                              |                 | <===== Drier ===== Future Conditions ===== Wetter =====> |                 |                                 |          |                 |                 |                        |
|------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
| Forecast Point               | Forecast Period | =====  |                 | Chance Of Exceeding *           |          | =====           |                 | 30-Yr Avg.<br>(1000AF) |
|                              |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| =====                        |                 |  |                 |                                 |          |                 |                 |                        |
| BUMPING LAKE INFLOW          | APR-SEP         | 111  | 126             | 137                             | 104      | 148             | 163             | 132                    |
|                              | APR-JUL         | 104  | 118             | 127                             | 104      | 136             | 150             | 122                    |
| AMERICAN RIVER near Nile     | APR-SEP         | 101  | 114             | 122                             | 103      | 130             | 143             | 118                    |
|                              | APR-JUL         | 94   | 105             | 113                             | 105      | 121             | 132             | 108                    |
| RIMROCK LAKE INFLOW          | APR-SEP         | 203  | 230             | 245                             | 102      | 260             | 285             | 240                    |
|                              | APR-JUL         | 177  | 197             | 210                             | 102      | 224             | 244             | 205                    |
| NACHES near Naches           | APR-SEP         | 720  | 800             | 850                             | 101      | 900             | 980             | 840                    |
|                              | APR-JUL         | 665  | 730             | 775                             | 102      | 820             | 885             | 760                    |
| AHTANUM CREEK nr Tampico (2) | APR-SEP         | 27   | 38              | 46                              | 100      | 54              | 65              | 46                     |
|                              | APR-JUL         | 25   | 35              | 42                              | 100      | 49              | 59              | 42                     |
| YAKIMA near Parker           | APR-SEP         | 1640   | 1830            | 1960                            | 102      | 2090            | 2280            | 1920                   |
|                              | APR-JUL         | 1490   | 1660            | 1780                            | 103      | 1900            | 2070            | 1730                   |
| KLICKITAT near Glenwood      | APR-JUN         | 91   | 104             | 112                             | 87       | 120             | 133             | 129                    |
|                              | APR-SEP         | 115  | 133             | 145                             | 89       | 157             | 175             | 163                    |

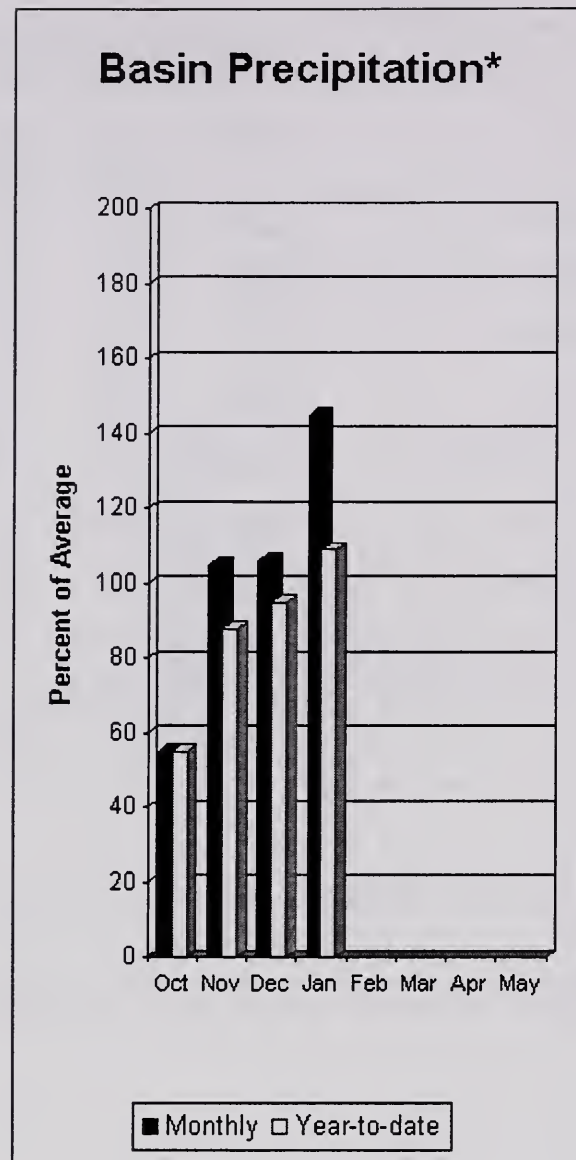
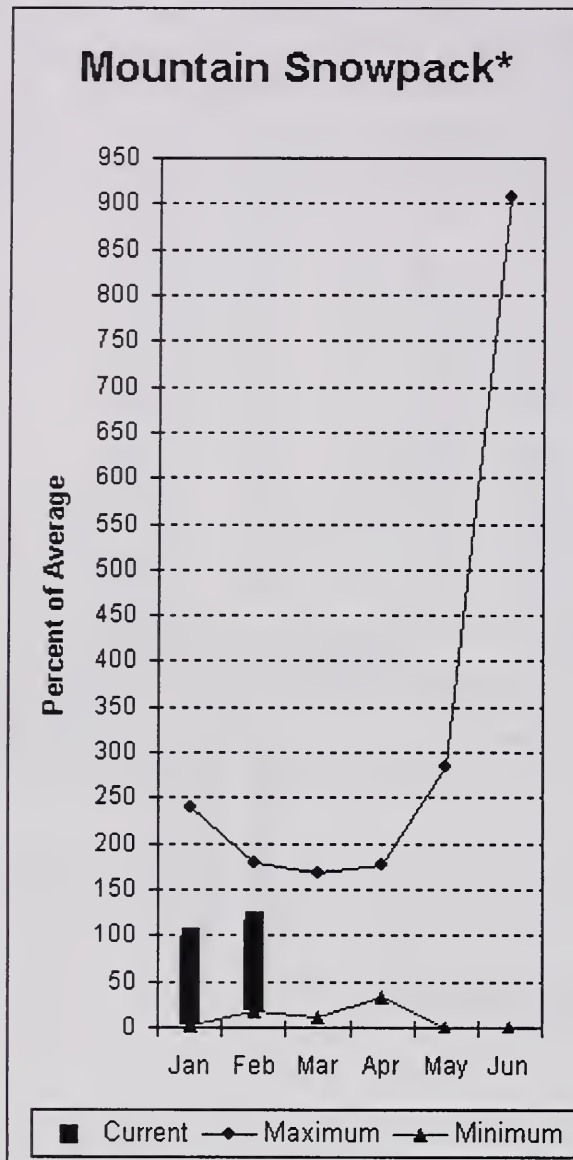
| LOWER YAKIMA RIVER BASIN<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | LOWER YAKIMA RIVER BASIN<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|--|-----------------|------------------------|-----------|-------|--|----------------------|-------------------|---------|
| Reservoir  | Usable Capacity | *** Usable Storage *** |           |       | Watershed  | Number of Data Sites | This Year as % of |         |
|  |                 | This Year              | Last Year | Avg   |  |                      | Last Yr           | Average |
| BUMPING LAKE   | 33.7            | 10.7                   | 24.7      | 9.9   |  |                      |                   |         |
| RIMROCK  | 198.0           | 80.9                   | 107.8     | 111.8 |  |                      |                   |         |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Walla Walla River Basin



\*Based on selected stations

January precipitation was 146% of average, maintaining the year-to-date precipitation at 103% of average. Snowpack in the basin was 117% of average. Streamflow forecasts are 114% of average for Mill Creek and 109% for the SF Walla Walla near Milton-Freewater. January streamflow was 118% of average for the Walla Walla River. Average temperatures were 2-4 degrees below normal for the past 28 days and 1 degree below average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Walla Walla River Basin

## Streamflow Forecasts - February 1, 2004

| Forecast Point                       | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          | 30-Yr Avg.<br>(1000AF) |                 |                 |
|--------------------------------------|-----------------|--|-----------------|---------------------------------|----------|------------------------|-----------------|-----------------|
|                                      |                 | =====  |                 | Chance Of Exceeding *           |          |                        | =====           |                 |
|                                      |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) |                        | 30%<br>(1000AF) | 10%<br>(1000AF) |
| MILL CREEK at Walla Walla            | APR-SEP         | 12.9   | 18.0            | 21                              | 114      | 24                     | 29              | 18.4            |
|                                      | APR-JUL         | 11.9   | 17.0            | 20                              | 110      | 23                     | 28              | 18.2            |
| SF WALLA WALLA near Milton-Freewater | APR-JUL         | 47   | 54              | 58                              | 109      | 62                     | 69              | 53              |
|                                      | APR-SEP         | 60   | 67              | 72                              | 109      | 77                     | 84              | 66              |

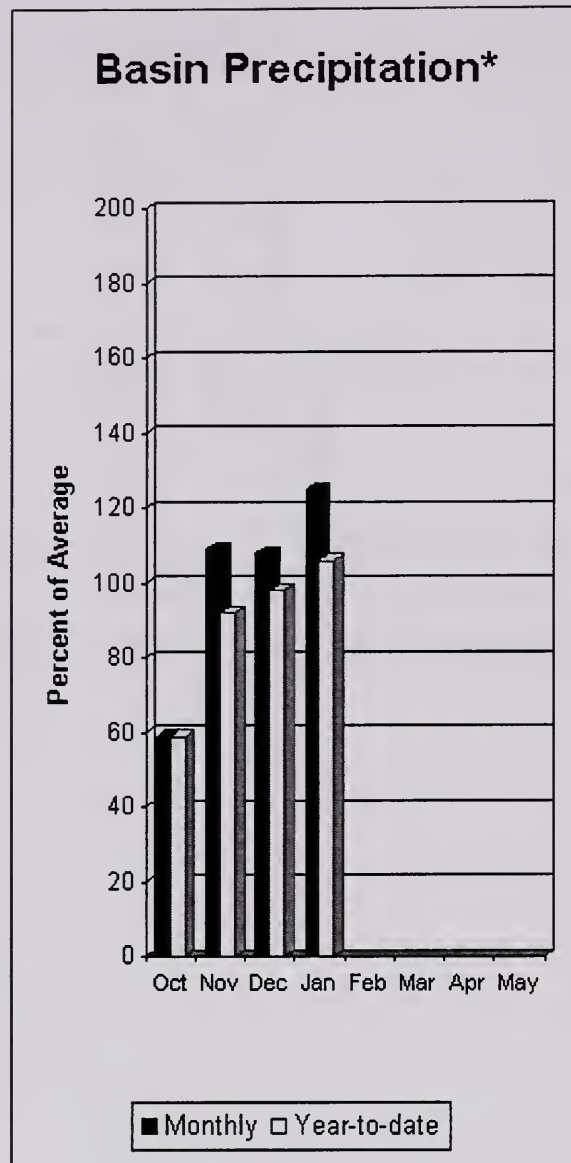
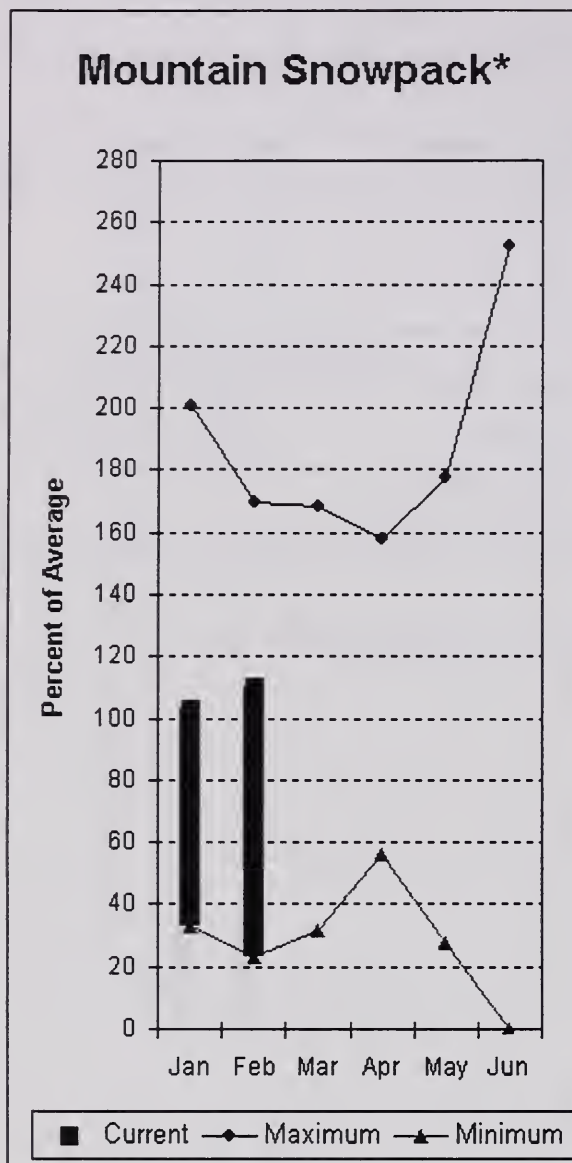
| WALLA WALLA RIVER BASIN                      |                 |                        |           |     | WALLA WALLA RIVER BASIN                        |                      |                   |         |
|--|-----------------|------------------------|-----------|-----|--|----------------------|-------------------|---------|
| Reservoir Storage (1000 AF) - End of January |                 |                        |           |     | Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
| Reservoir                                    | Usable Capacity | *** Usable Storage *** |           |     | Watershed                                      | Number of Data Sites | This Year as % of |         |
|  |                 | This Year              | Last Year | Avg |  |                      | Last Yr           | Average |
|  |                 |                        |           |     | WALLA WALLA RIVER                              | 2                    | 237               | 117     |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Lower Snake River Basin



\*Based on selected stations

The April - September forecast is for 111% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 98% and 108% of normal respectively. January precipitation was 125% of average, bringing the year-to-date precipitation to 106% of average. February 1 snowpack readings averaged 110% of normal. January streamflow was 54% of average for Snake River below Lower Granite Dam and 55% for Grande Ronde River near Troy. Average temperatures were 1-3 degrees below normal for the past 28 days and near normal for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Lower Snake River Basin

## Streamflow Forecasts - February 1, 2004

|                                   |                 | <<===== Drier ===== |                 | Future Conditions               |          | ===== Wetter =====> |                 |                        |
|-----------------------------------|-----------------|---------------------|-----------------|---------------------------------|----------|---------------------|-----------------|------------------------|
| Forecast Point                    | Forecast Period | =====               |                 | Chance Of Exceeding *           |          | =====               |                 | 30-Yr Avg.<br>(1000AF) |
|                                   |                 | 90%<br>(1000AF)     | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF)     | 10%<br>(1000AF) |                        |
| =====                             |                 |                     |                 |                                 |          |                     |                 |                        |
| GRANDE RONDE at Troy (1)          | MAR-JUL         | 1122                | 1512            | 1690                            | 107      | 1868                | 2260            | 1580                   |
|                                   | APR-SEP         | 966                 | 1319            | 1480                            | 108      | 1641                | 1995            | 1370                   |
| CLEARWATER at Spalding (1,2)      | APR-JUL         | 5260                | 7310            | 8240                            | 111      | 9170                | 11220           | 7430                   |
|                                   | APR-SEP         | 5700                | 7750            | 8680                            | 111      | 9610                | 11660           | 7850                   |
| SNAKE blw Lower Granite Dam (1,2) | APR-JUL         | 11485               | 17891           | 20800                           | 96       | 23710               | 30110           | 21600                  |
|                                   | APR-SEP         | 13231               | 20430           | 23700                           | 98       | 26970               | 34170           | 24100                  |

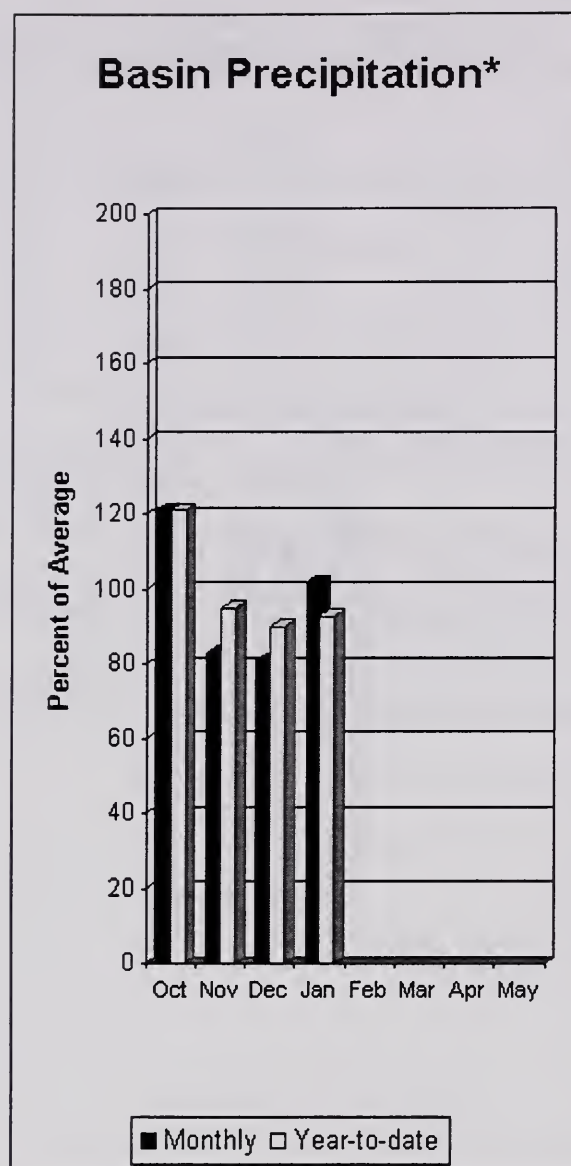
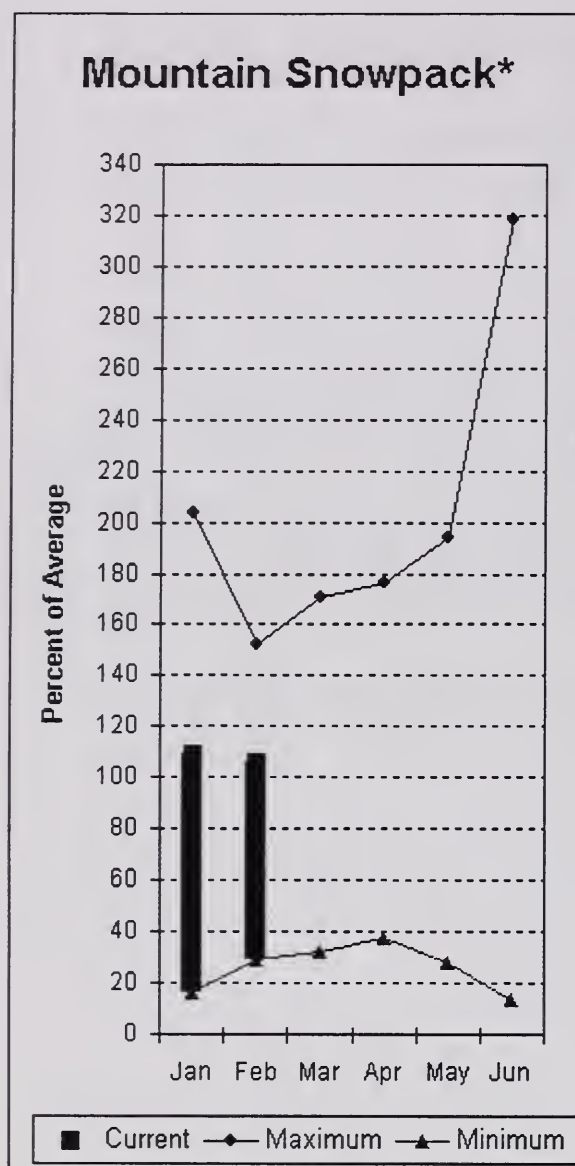
| LOWER SNAKE RIVER BASIN<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |     | LOWER SNAKE RIVER BASIN<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|---|-----------------|------------------------|-----------|-----|---|----------------------|-------------------|---------|
| Reservoir   | Usable Capacity | *** Usable Storage *** |           |     | Watershed   | Number of Data Sites | This Year as % of |         |
|   |                 | This Year              | Last Year | Avg |   |                      | Last Yr           | Average |
|   |                 |                        |           |     | LOWER SNAKE, GRANDE RONDE   | 11                   | 174               | 110     |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Cowlitz - Lewis River Basins



\*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 104% and Cowlitz River at Castle Rock, 103% of average. The Columbia River at The Dalles is forecasted to have 97% of average flows this summer. January average streamflow for Cowlitz River was 88% and 102% for Lewis River. The Columbia River at The Dalles was at 70% of average. January precipitation was 102% of average and the water-year average was 93%. February 1 snow cover for Cowlitz River was 108%, and Lewis River was 103% of average. Average temperatures were near normal during the past 28 days and near normal throughout the water year.

*For more information contact your local Natural Resources Conservation Service office.*

# Cowlitz - Lewis River Basins

## Streamflow Forecasts - February 1, 2004

| Forecast Point                 | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          |                 |                 | 30-Yr Avg<br>(1000AF) |
|--------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|-----------------------|
|                                |                 | =====  |                 | Chance Of Exceeding *           |          | =====           |                 |                       |
|                                |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                       |
| LEWIS at Ariel (2)             | APR-JUL         | 777  | 951             | 1070                            | 104      | 1189            | 1363            | 1031                  |
|                                | APR-SEP         | 917  | 1098            | 1220                            | 104      | 1342            | 1523            | 1176                  |
| COWLITZ R. bl Mayfield Dam (2) | APR-SEP         | 946  | 1597            | 2040                            | 106      | 2483            | 3134            | 1922                  |
|                                | APR-JUL         | 691  | 1345            | 1790                            | 106      | 2235            | 2889            | 1689                  |
| COWLITZ R. at Castle Rock (2)  | APR-SEP         | 1173   | 2094            | 2720                            | 103      | 3346            | 4267            | 2639                  |
|                                | APR-JUL         | 1602   | 2059            | 2370                            | 103      | 2681            | 3138            | 2295                  |
| KLICKITAT near Glenwood        | APR-JUN         | 91   | 104             | 112                             | 87       | 120             | 133             | 129                   |
|                                | APR-SEP         | 115  | 133             | 145                             | 89       | 157             | 175             | 163                   |
| COLUMBIA R. at The Dalles (2)  | APR-SEP         | 78964  | 89346           | 96400                           | 97       | 103450          | 113840          | 99000                 |
|                                | APR-JUL         | 63583  | 74906           | 82600                           | 97       | 90290           | 101620          | 84800                 |

### COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of January

| Reservoir | Usable Capacity | *** Usable Storage *** |           |     |
|-----------|-----------------|------------------------|-----------|-----|
|           |                 | This Year              | Last Year | Avg |

### COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - February 1, 2004

| Watershed     | Number of Data Sites | This Year as % of |         |
|---------------|----------------------|-------------------|---------|
|               |                      | Last Yr           | Average |
| LEWIS RIVER   | 4                    | 244               | 103     |
| COWLITZ RIVER | 5                    | 203               | 108     |

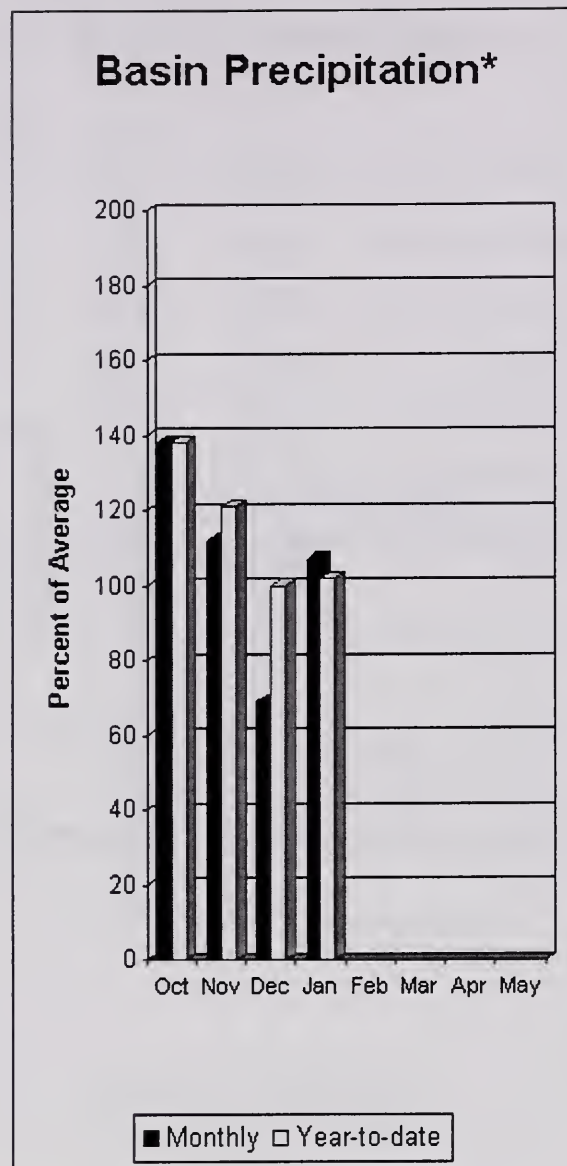
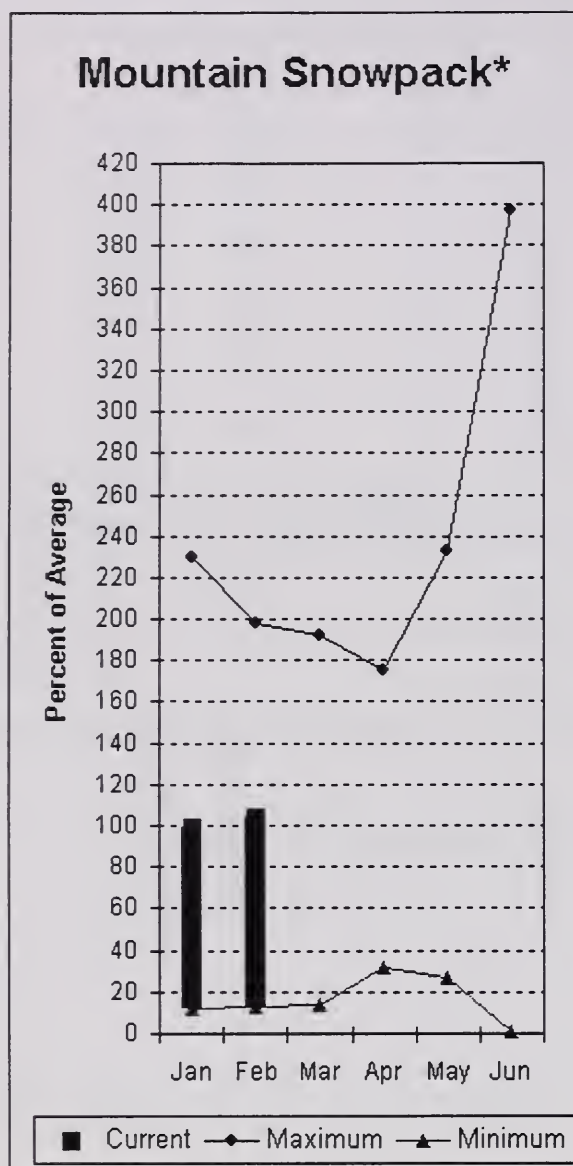
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.



## White - Green River Basins



\*Based on selected stations

Summer runoff is forecast to be 103% of normal for the Green River below Howard Hanson Dam and 100% for the White River near Buckley. February 1 snowpack was 108% of average in both White River and Puyallup River basins and 101% in Green River Basin. Water content on February 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 26.3 inches. This site has a February 1 average of 22.1 inches. January precipitation was 107% of average, bringing the water year-to-date to 102% of average for the basins. Average temperatures in the area were 1 degree above normal for the past 28 days and near normal for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*

# White - Green - Puyallup River Basins

## Streamflow Forecasts - February 1, 2004

|                                 |                 | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          |                 |                 |                        |
|---------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
| Forecast Point                  | Forecast Period | Chance Of Exceeding *                                      |                 |                                 |          |                 |                 | 30-Yr Avg.<br>(1000AF) |
|                                 |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| WHITE near Buckley (1,2)        | APR-JUL         | 342  | 409             | 440                             | 100      | 471             | 538             | 440                    |
|                                 | APR-SEP         | 420  | 498             | 534                             | 100      | 570             | 648             | 534                    |
| GREEN below Howard Hanson (1,2) | APR-JUL         | 165  | 223             | 250                             | 103      | 277             | 335             | 243                    |
|                                 | APR-SEP         | 188  | 248             | 275                             | 103      | 302             | 362             | 268                    |

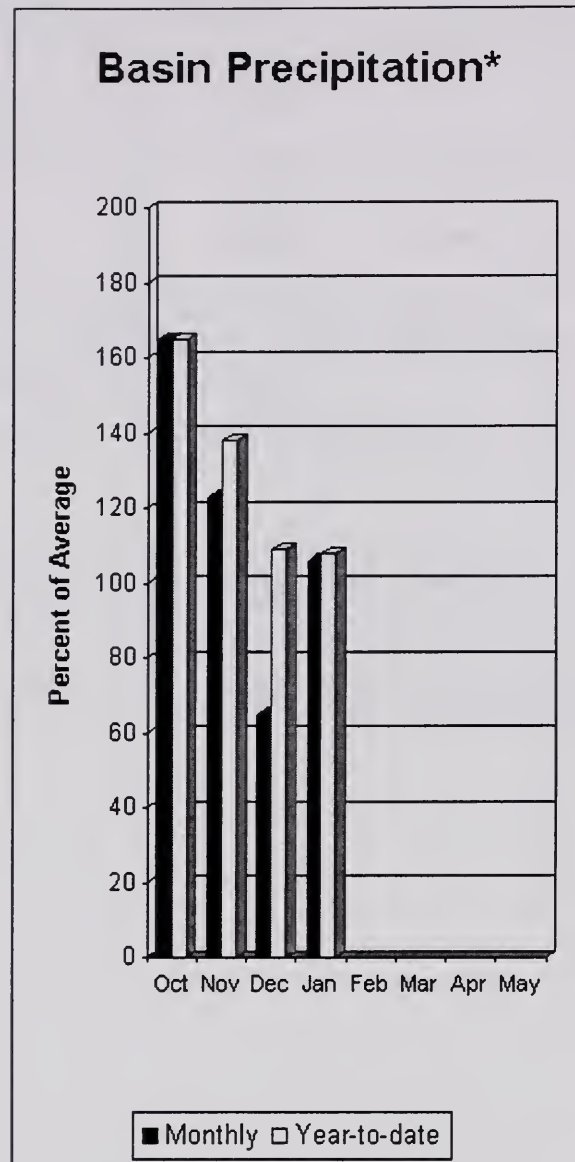
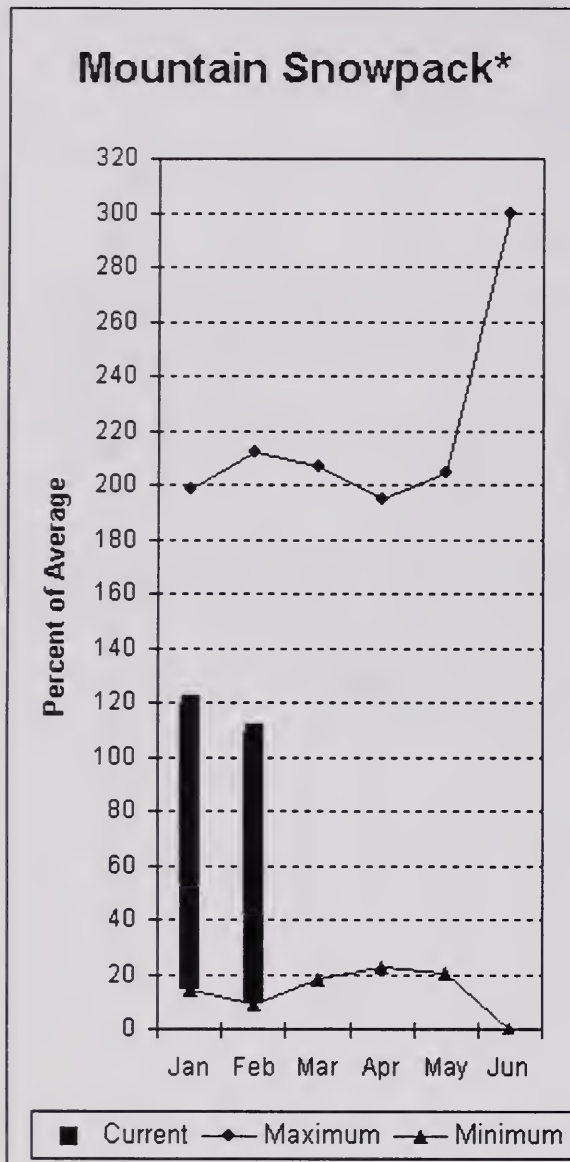
| WHITE - GREEN - PUYALLUP RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                    |                        |              |     | WHITE - GREEN - PUYALLUP RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                            |                            |         |
|---|--------------------|------------------------|--------------|-----|---|----------------------------|----------------------------|---------|
| Reservoir   | Usable<br>Capacity | *** Usable Storage *** |              |     | Watershed   | Number<br>of<br>Data Sites | This Year as % of<br>===== |         |
|   |                    | This<br>Year           | Last<br>Year | Avg |   |                            | Last Yr                    | Average |
|   |                    |                        |              |     | WHITE RIVER   | 2                          | 133                        | 108     |
|   |                    |                        |              |     | GREEN RIVER   | 7                          | 285                        | 101     |
|   |                    |                        |              |     | PUYALLUP RIVER  | 2                          | 134                        | 108     |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Central Puget Sound River Basins



\*Based on selected stations

Forecast for spring and summer flows are: 103% for Cedar River near Cedar Falls; 104% for Rex River; 104% for South Fork of the Tolt River; and 106% for Cedar River at Cedar Falls. Basin-wide precipitation for January was 106% of average, bringing water-year-to-date to 108% of average. February 1 average snow cover in Cedar River Basin was 107%, Tolt River Basin was 118%, Snoqualmie River Basin was 105%, and Skykomish River Basin was 107%. Alpine Meadows SNOTEL site, at 3500 feet, had 37.2 inches of water content. Average February 1 water content is 29.2 inches at Olallie Meadows. Temperatures were near average for the past 28 days and near normal for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*



# Central Puget Sound River Basins

## Streamflow Forecasts - February 1, 2004

| Forecast Point             | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          |                 |                 | 30-Yr Avg.<br>(1000AF) |
|----------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
|                            |                 | Chance Of Exceeding *                                      |                 |                                 |          |                 |                 |                        |
|                            |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| CEDAR near Cedar Falls     | APR-JUL         | 56   | 67              | 75                              | 103      | 83              | 94              | 73                     |
|                            | APR-SEP         | 62   | 74              | 82                              | 103      | 90              | 102             | 80                     |
| REX near Cedar Falls       | APR-JUL         | 17.4   | 23              | 26                              | 104      | 30              | 35              | 25                     |
|                            | APR-SEP         | 20   | 25              | 29                              | 104      | 33              | 38              | 28                     |
| CEDAR RIVER at Cedar Falls | APR-JUL         | 49   | 66              | 78                              | 105      | 90              | 107             | 74                     |
|                            | APR-SEP         | 49   | 66              | 77                              | 106      | 88              | 105             | 73                     |
| SOUTH FORK TOLT near Index | APR-JUL         | 11.7   | 13.7            | 15.0                            | 102      | 16.3            | 18.3            | 14.7                   |
|                            | APR-SEP         | 14.0   | 16.1            | 17.5                            | 104      | 18.9            | 21              | 16.9                   |

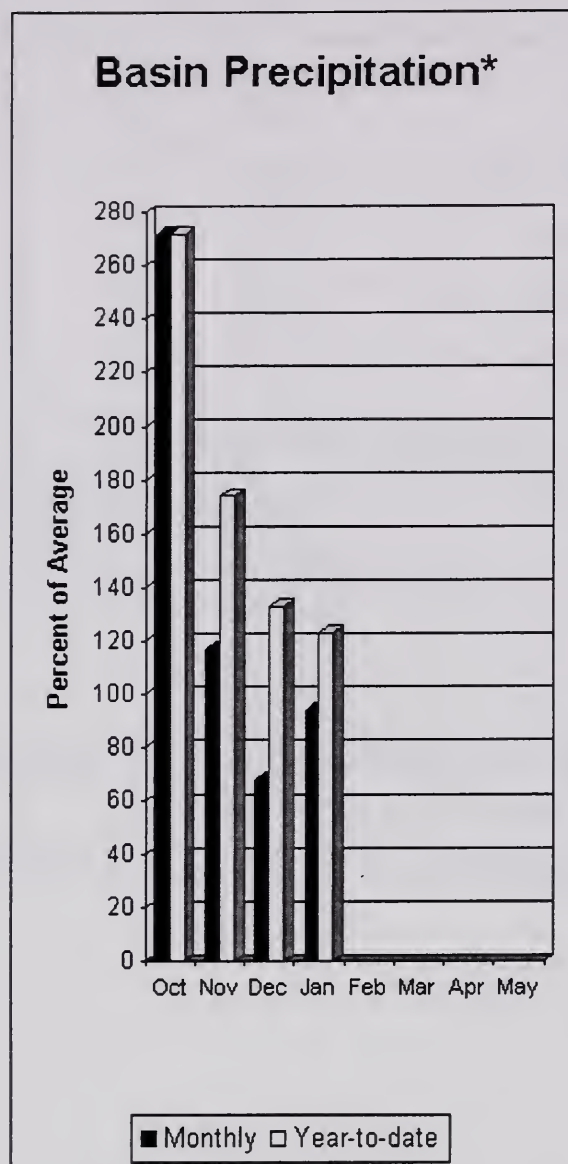
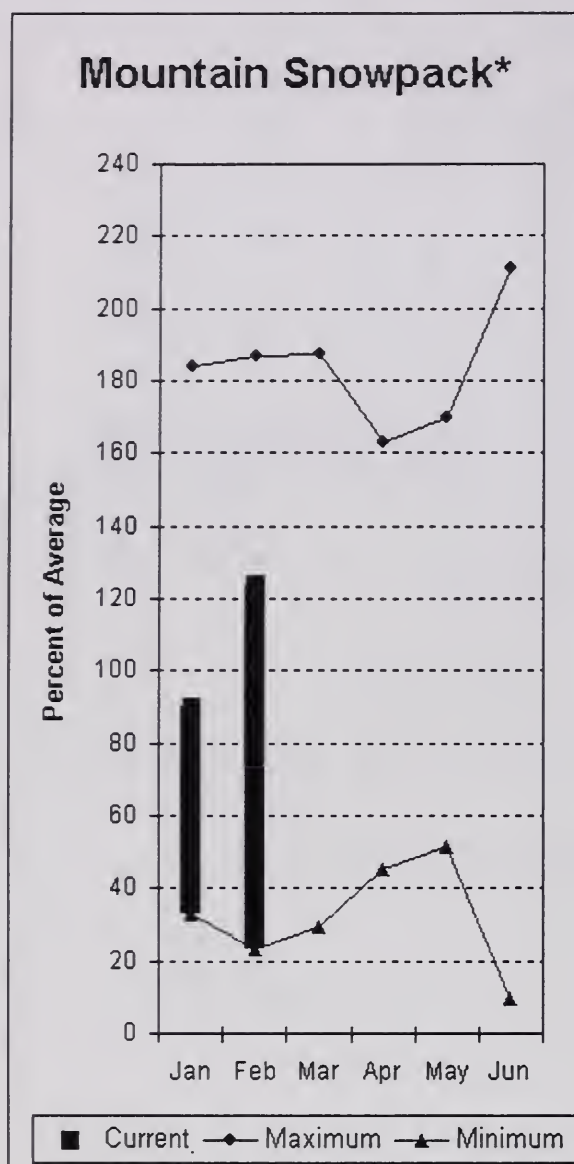
| CENTRAL PUGET SOUND RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |     | CENTRAL PUGET SOUND RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|--|-----------------|------------------------|-----------|-----|--|----------------------|-------------------|---------|
| Reservoir  | Usable Capacity | *** Usable Storage *** |           |     | Watershed  | Number of Data Sites | This Year as % of |         |
|  |                 | This Year              | Last Year | Avg |  |                      | Last Yr           | Average |
|  |                 |                        |           |     | CEDAR RIVER  | 4                    | 361               | 107     |
|  |                 |                        |           |     | TOLT RIVER   | 2                    | 1887              | 118     |
|  |                 |                        |           |     | SNOQUALMIE RIVER   | 5                    | 279               | 105     |
|  |                 |                        |           |     | SKYKOMISH RIVER  | 2                    | 313               | 110     |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## North Puget Sound River Basins



\*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 102% of average for the spring and summer period. January streamflow in Skagit River was 85% of average. Other forecast points included Baker River at 102% and Thunder Creek at 96% of average. Basin-wide precipitation for January was 94% of average, bringing water-year-to-date to 123% of average. February 1 average snow cover in Skagit River Basin was 91%, Baker River Basin was at 126% and Nooksack River Basin was 155%. Rainy Pass SNOTEL, at 4,780 feet, had 23.7 inches of water content. Average February 1 water content is 30.2 inches at Rainy Pass. February 1 Skagit River reservoir storage was 99% of average and 70% of capacity. Average temperatures for the past 28 days were slightly above normal for the basin and near average for the water year.

For more information contact your local Natural Resources Conservation Service office.

# North Puget Sound River Basins

## Streamflow Forecasts - February 1, 2004

|                             |                 | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          |                 |                 |                        |
|-----------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
| Forecast Point              | Forecast Period | =====  |                 | Chance Of Exceeding *           |          | =====           |                 | 30-Yr Avg.<br>(1000AF) |
|                             |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | {% AVG.} | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| THUNDER CREEK near Newhalem | APR-JUL         | 200  | 215             | 225                             | 96       | 235             | 250             | 234                    |
|                             | APR-SEP         | 290  | 308             | 320                             | 96       | 332             | 350             | 333                    |
| SKAGIT at Newhalem (2)      | APR-JUL         | 1609   | 1746            | 1840                            | 99       | 1934            | 2071            | 1864                   |
|                             | APR-SEP         | 2022   | 2164            | 2260                            | 102      | 2356            | 2498            | 2217                   |
| BAKER RIVER near Concrete   | APR-JUL         | 725  | 799             | 850                             | 103      | 901             | 975             | 828                    |
|                             | APR-SEP         | 917  | 1008            | 1070                            | 102      | 1132            | 1223            | 1050                   |

| NORTH PUGET SOUND RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |       | NORTH PUGET SOUND RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                                   |
|--|-----------------|------------------------|-----------|-------|--|----------------------|-----------------------------------|
| Reservoir  | Usable Capacity | *** Usable Storage *** |           |       | Watershed  | Number of Data Sites | This Year as % of Last Yr Average |
|  |                 | This Year              | Last Year | Avg   |  |                      |                                   |
| ROSS   | 1404.1          | 962.8                  | 1076.0    | 978.3 | SKAGIT RIVER   | 10                   | 131                               |
| DIABLO RESERVOIR   | 90.6            | 87.2                   | 84.3      | 85.5  | BAKER RIVER  | 2                    | 310                               |
| GORGE RESERVOIR  | 9.8             | 8.0                    | 7.5       | 7.9   | NOOKSACK RIVER   | 2                    | 287                               |

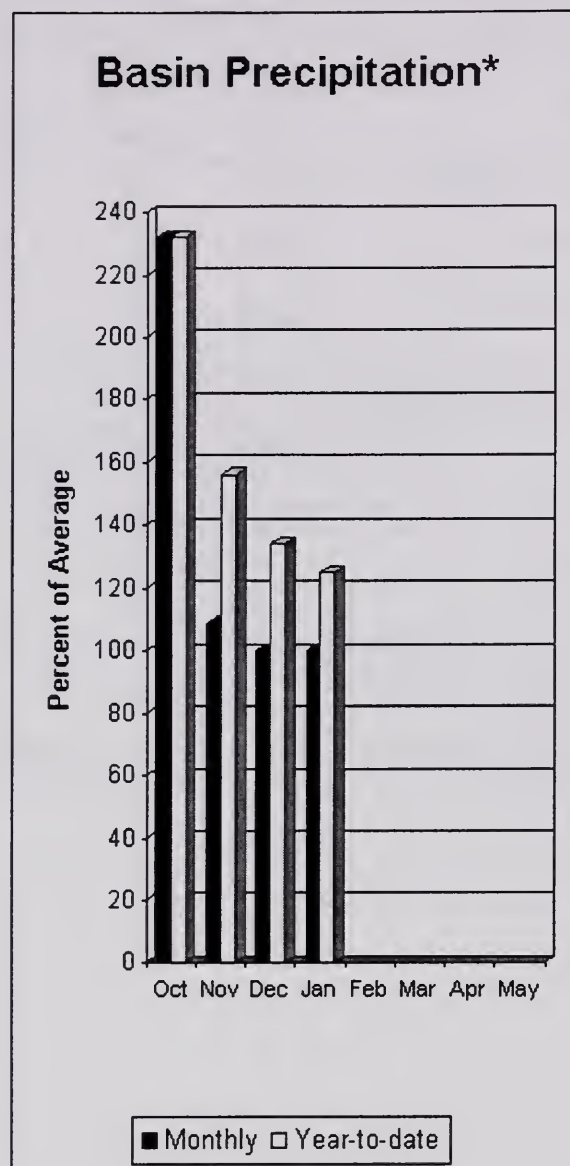
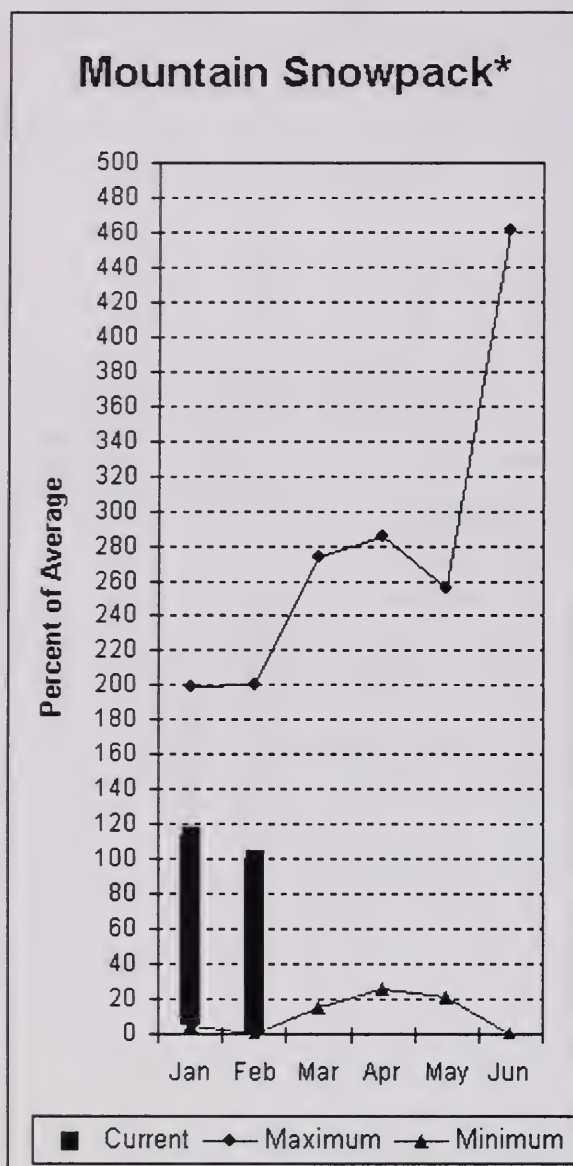
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
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## Olympic Peninsula River Basins



\*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 105% and 101% respectively. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. January precipitation was 100% of average. Precipitation has accumulated at 125% of average for the water year. January precipitation at Quillayute was 14.02 inches. The thirty-year average for January is 13.65 inches. Olympic Peninsula snowpack averaged 100% of normal on February 1. Temperatures were 1-3 degrees above average for the past 28 days and near average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*

# Olympic Peninsula River Basins

## Streamflow Forecasts - February 1, 2004

| Forecast Point          | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> |                 |                                 |          |                 |                 |                        |
|-------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
|                         |                 | =====  |                 | Chance Of Exceeding *           |          | =====           |                 | 30-Yr Avg.<br>(1000AF) |
|                         |                 | 90%<br>(1000AF)  | 70%<br>(1000AF) | 50% (Most Probable)<br>(1000AF) | (% AVG.) | 30%<br>(1000AF) | 10%<br>(1000AF) |                        |
| DUNGENESS near Sequim   | APR-SEP         | 143  | 153             | 160                             | 105      | 167             | 177             | 152                    |
|                         | APR-JUL         | 113  | 121             | 126                             | 102      | 131             | 139             | 124                    |
| ELWHA near Port Angeles | APR-SEP         | 443  | 483             | 510                             | 101      | 537             | 577             | 503                    |
|                         | APR-JUL         | 368  | 399             | 420                             | 100      | 441             | 472             | 419                    |

| OLYMPIC PENINSULA RIVER BASINS<br>Reservoir Storage (1000 AF) - End of January |                 |                        |           |     | OLYMPIC PENINSULA RIVER BASINS<br>Watershed Snowpack Analysis - February 1, 2004 |                      |                   |         |
|--|-----------------|------------------------|-----------|-----|--|----------------------|-------------------|---------|
| Reservoir  | Usable Capacity | *** Usable Storage *** |           |     | Watershed  | Number of Data Sites | This Year as % of |         |
|  |                 | This Year              | Last Year | Avg |  |                      | Last Yr           | Average |
|  |                 |                        |           |     | OLYMPIC PENINSULA  | 2                    | 117               | 100     |
|  |                 |                        |           |     | ELWHA RIVER  | 0                    | 0                 | 0       |
|  |                 |                        |           |     | MORSE CREEK  | 1                    | 166               | 108     |
|  |                 |                        |           |     | DUNGENESS RIVER  | 0                    | 21                | 0       |
|  |                 |                        |           |     | QUILCENE RIVER   | 1                    | 101               | 91      |
|  |                 |                        |           |     | WYNOOCHEE RIVER  | 0                    | 0                 | 0       |

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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- (2) - The value is natural volume - actual volume may be affected by upstream water management.





*Issued by*

**Bruce Knight**  
Chief  
Natural Resources Conservation Service  
U.S. Department of Agriculture

*Released by*

**R.L. "Gus" Highbanks**  
State Conservationist  
Natural Resources Conservation Service  
Spokane, Washington

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## The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work\*:

|                |  |
|----------------|--|
| <b>Canada</b>  | Ministry of Sustainable Resources<br>Snow Survey, River Forecast Centre, Victoria, British Columbia  |
| <b>State</b>   | Washington State Department of Ecology<br>Washington State Department of Natural Resources   |
| <b>Federal</b> | Department of the Army<br>Corps of Engineers<br>U.S. Department of Agriculture<br>Forest Service<br>U.S. Department of Commerce<br>NOAA, National Weather Service<br>U.S. Department of Interior<br>Bonneville Power Administration<br>Bureau of Reclamation<br>Geological Survey<br>National Park Service<br>Bureau of Indian Affairs |
| <b>Local</b>   | City of Tacoma<br>City of Seattle<br>Chelan County P.U.D.<br>Pacific Power and Light Company<br>Puget Sound Power and Light Company<br>Washington Water Power Company<br>Snohomish County P.U.D.<br>Colville Confederated Tribes<br>Spokane County<br>Yakama Indian Nation<br>Whatcom County<br>Pierce County                          |
| <b>Private</b> | Okanogan Irrigation District<br>Wenatchee Heights Irrigation District<br>Newman Lake Homeowners Association<br>Whitestone Reclamation District   |

\*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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# Washington Water Supply Outlook Report

Natural Resources Conservation Service  
Spokane, WA

